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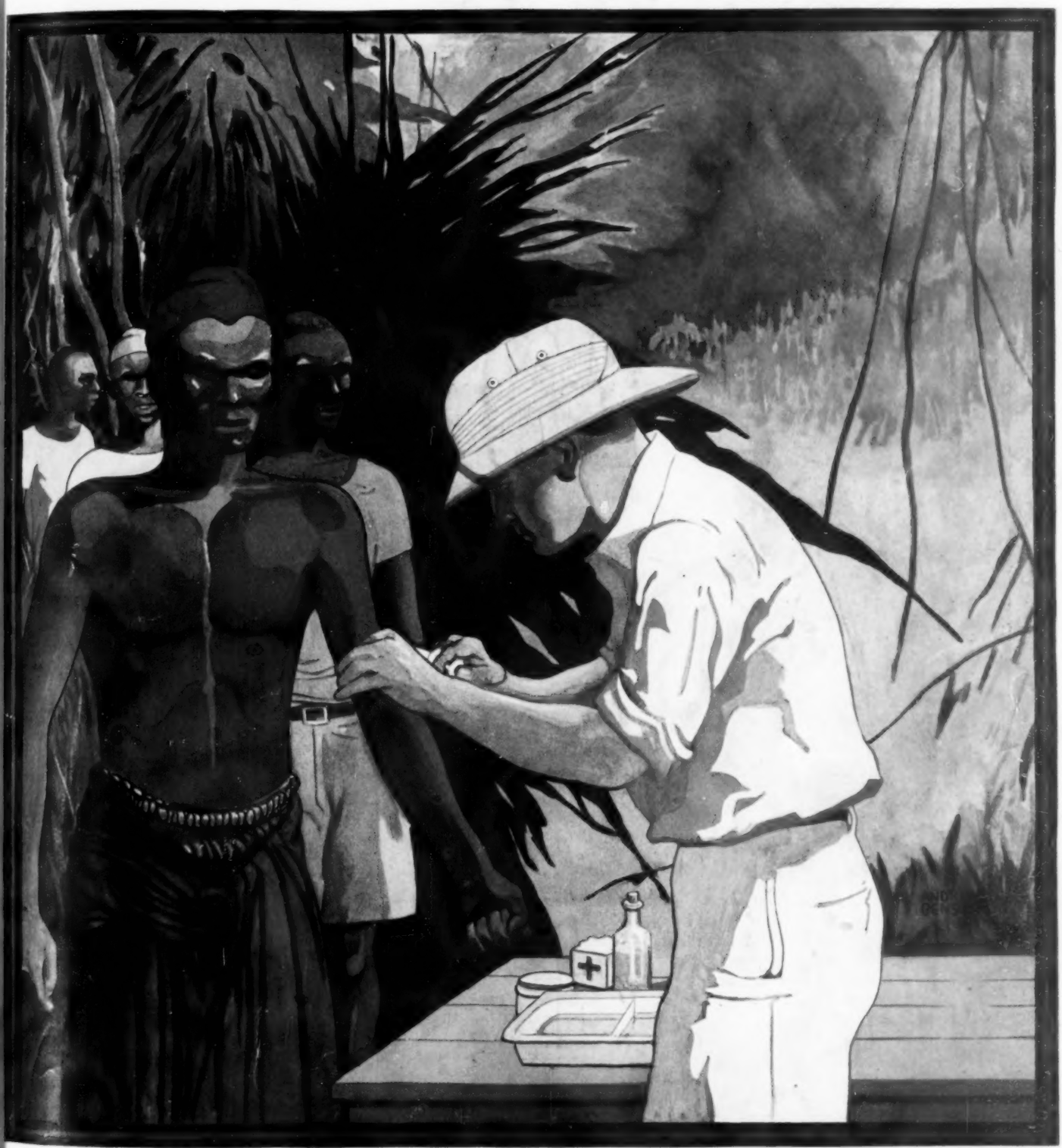
HYGEIA

The HEALTH MAGAZINE

PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION



Nov., 1933

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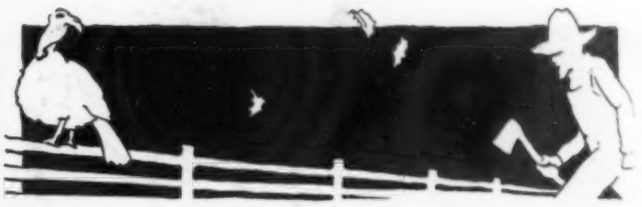
HYGEIA



THE HEALTH MAGAZINE

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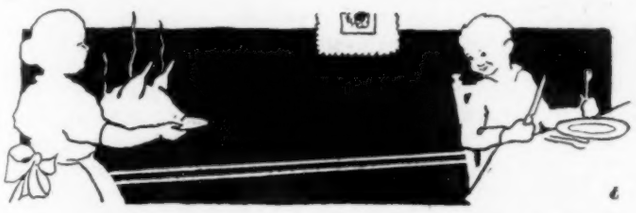

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CONTRIBUTORS TO THIS ISSUE

● Dr. J. Robert Burke, Holyoke, Mass., specializes in diseases of the eye, ear, nose and throat. . . . Dr. Rachel Ash, Philadelphia, a frequent contributor to Hygeia, devotes her attention in this issue to an evaluation of the familiar advice, "Stop That Cough!" . . . Alfred E. Parker, director of physical education, Berkeley (Calif.) High School, tells what "Training for Football" involves.

● Dr. Charles Lerner, dermatologist, New York City, delves into the subject of "Feminine Beautification: A Quest from Ancient to Modern Times." . . . Dr. Smiley Blanton, psychiatrist, New York City, gives a comprehensive view of the causes and treatment of "Anxieties and Worries." . . . Edward Hochhauser, president, Altro Work Shops, Inc., New York City, contributes an encouraging article, entitled, "Must the Tuberculous Be Dependent?"

● Dr. R. Tait McKenzie is research professor of physical education, University of Pennsylvania. . . . Doris W. McCray, food consultant, this month considers the subject of breads accepted by the American Medical Association. . . . Helen M. Holt, R.N., public health nurse, gives a glimpse into a children's paradise, "A Hawaiian Kindergarten."

● Dr. Thurman B. Rice, professor of bacteriology and public health, Indiana University School of Medicine, tells what should be included in the sex education of the school child. . . . In "Old Maids' Children," Louise Price Bell, Akron, N. Y., shows that parenthood does not inevitably bring a knowledge of the wisest and most effective methods of child training.

● Dr. P. M. Ashburn, Colonel, U. S. Army, retired, concludes his series on "Progress in Preventive Medicine" with a discussion of glandular dysfunction and the diseases of old age. . . . Guideposts to mental health in infancy are given by Katherine Brownell Oettinger, mental hygiene supervisor, Scranton Visiting Nurse Association.

● Dr. George W. Crile, professor-emeritus of surgery, Western Reserve University School of Medicine, contributes a paper recently read before the American Association for the Advancement of Science.

● For the younger readers, Dr. Oscar Reiss, associate professor of pediatrics, University of Southern California Medical School, and Dorothy W. Baruch, instructor in education, Whittier College, continue their series, "I Want to Know," this month telling "What Happens When You Eat," . . . Ivah Simpson introduces two delightful characters, the Jolly Juice Twins.

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November, 1933

EDITORIAL

Poisons at Home

AS OUR life has become more and more complex and as we have taken increasing advantage of the discoveries of modern chemistry and engineering science, we have gradually increased our life expectancy. We have eliminated much of the danger from many diseases but we have, at the same time, introduced new hazards into living which are all the more dangerous because most people are unaware of them.

Spray painting in motor factories, the development of new methods of chemical treatment of silk, cotton and other textiles, the making of rubber tires and the metallic plating industries involve considerable hazard to health because of the effects produced on the tissues of the human body by the chemical substances used. It is now generally realized that there is little, if any, hazard to health in the wearing of silk which has been filled with lead; that there is little hazard from the use of electrical refrigeration, provided the gases used are kept within a closed system; that wood alcohol is safe if it is used in the automobile radiator and not for drinking purposes. However, many of the new chemicals introduced into daily life are introduced without suitable warning to the public.

CASES have been reported of severe injury to the kidneys by the use of varnishes and paints containing dangerous dye substances, the work having been done in basements or closed rooms without provision for adequate ventilation. Benzene is a substance which may be used ordinarily without much danger or risk, but when it is used in paints on hot metal or in unventilated places, illness or death may result. It is not hazardous to dye tan shoes in the presence of plenty of fresh air, but to sensitive persons there may be great danger in wearing such shoes before they have been completely dried, or in inhaling the poison while undertaking the dyeing process.

Recently, special attention has been paid to the use of carbon tetrachloride, a substance much used in the dry cleaning industry and also in the extinguishing of fires. In the dry cleaning industry, carbon tetrachloride is useful because it is not inflammable or explosive. It is much used in the home in the form of various dry cleaning substances for the removal of grease spots. When naphtha and gasoline were used before the development of this substance, there were frequent explosions and burns which are now almost wholly avoided. Used in large amounts directly on the human body or taken into the body in any considerable amount, however, carbon tetrachloride is exceedingly poisonous.

FEW persons realize that carbon tetrachloride is valuable in extinguishing fires. It is used in most of the small fire extinguishers that are carried in automobiles, and also in similar extinguishers kept in homes and offices. When this substance is used in the presence of plenty of fresh air and good ventilation, there is little, if any, danger to human life. If, however, it happens to be used in such a manner as to be inhaled in large amounts in connection with fires, death may result. For instance, it is reported that two men in the United States Navy died from the fumes produced in a small enclosed room when the clothes of one man caught fire and the fire extinguisher was used to save him.

As was said in the first paragraph of this discussion, there are many other hazards to human life as a result of changes in our modern civilization. The number of deaths from accidents, particularly motor car accidents, now vastly exceeds the total number from most of the common infectious diseases. The introduction of illuminating gas into the home was a blessing and permitted to a large extent the growth of our modern cities, yet the number of deaths from suffocation by illuminating gas regularly reported is considerable. Moreover, there continue to be regularly listed deaths from carbon monoxide poisoning resulting from the inhaling of automobile exhaust gases. New substances will continue to be introduced and used both in the home and in industry, and many of them will be associated with the incidence of deaths resulting from failure to appreciate the dangers. Every manufacturer introducing such processes owes it to the public whom he would serve to see that people are made fully aware of the presence of the dangerous chemical or the possible dangers to health resulting from its use.

FROM time to time, legislation has been introduced into Congress making it compulsory for manufacturers to state fully on the label of every product with inherent dangers the nature of the product and methods of avoiding catastrophe in its employment. Investigations are now being made in many laboratories, including those of the United States government, as to the details desirable in such prospective legislation. Out of such research will come a new measure of safety for the public.

FIRST EYEGLASSES at MIDDLE AGE

By *J. Robert Burke*

"My husband says that I need glasses, and it was to please him that I came, but . . ."

"GOOD afternoon, Doctor. What can you do for me? I do hope you can do something, because for the last year or so I've noticed that I can't see things 'close to' as well as I used to. You know I've always had wonderful eyes! Why, when I was a girl I could do the finest kind of sewing and even now I can tell time by the town-hall clock, and that is easily a mile away. Threading needles? Why, for the last six months I haven't threaded one needle. It may be the depression, but I think they are making the eyes in needles much smaller. I have to get my husband to thread a number of them before he leaves the house. And another thing, when I go out to eat with any one I get so discouraged. Of course I don't want to let on to my friends that I can't read a menu, but honestly I do believe restaurants are making the type smaller so they can save on the size of the cards. What do I do in a case like that? Well, every restaurant always has lamb chops, green peas, romain salad and coffee parfait—and oh yes, cream of tomato soup—so when the waiter hands me the card I just say I'm not so hungry and order those things. Doctor, if you only knew how sick and tired I am of eating lamb chops and peas! Sit here? Thank you. My husband says that I need glasses, and it was to please him that I came, but of course . . ."

This monologue may seem a bit exaggerated, but I assure you it really is not. The speaker might just as well have been a man, for males are equally disturbed by the inability to see objects or print held close to their eyes. The condition usually comes on the individual when he approaches 45 years, but there is no hard and fast age limit since various persons are affected at various ages, some in the late thirties and others not until the early fifties. One should not feel too depressed when it does arrive, as it happens to every one—kings, queens, school teachers, screen beauties, magnates and paupers.

What is this condition and why does it come to disturb us? It is called presbyopia, and this term is derived from two words meaning "old man" and "sight." All is not known about this change, but one may be reassured that it is not a disease of the eyes but simply a natural process. It usually increases slowly but steadily to about 60 years, when it remains stationary. I shall not burden or confuse you by giving the various theories as to why it occurs but shall try to explain briefly what happens in the eyes to produce the condition.

In your younger years if you were fortunate enough to have good eyes, you were able to see distant and near objects equally well. In other words your eyes had some power so that either extreme was attainable almost instantly; that is, you could distinguish an object at a great distance and then could look quickly at something held close and make out all details. This is called visual accommodation.

On approaching 40, one begins to notice that in reading one likes to hold a book farther away and that one is beginning to be a bit more fussy about having the proper amount of light in which to read. Women complain about the eyes in needles; machinists say that they have been botching fine work; bookkeepers state they are posting in the wrong column; weavers have some of their work rejected as they have overlooked faults in the cloth; both sexes bitterly assail the insufficient lights in telephone booths and condemn all telephone directories in general because of the fine print. You no doubt remember hearing about the gray-haired lady who said that her eyes were all right, but her arms weren't long enough. In all the aforementioned instances the fine things which were once seen clearly now have become blurred, and efficiency and happiness in life are defi-

The artist cannot understand why his reading glasses are not adequate for his work.

nitely impaired. The "near-point" for vision has receded, and some means must be taken to bring it back. This can be accomplished best by the wearing of glasses.

Convex lenses worn before the eyes refract rays of light so that the rays come to a focus before they ordinarily would if allowed to be refracted by the parts of the eyeball which naturally perform this function. I have spoken before of visual accommodation; this is accomplished principally by a change in the shape of the somewhat elastic lens of the eye. The lens is encased in a transparent capsule, and this capsule, when stretched or relaxed by the action of a muscle which possesses this function, changes the shape of the lens and, therefore, its refractive power. As one grows older, the lens becomes harder and hence less elastic; owing to this change, it has not the former ability to alter its shape. Therefore the image of an object held within 13 or 14 inches of the eye is not properly transmitted to the retina. The retina is that part of the eye which receives all visual impressions and corresponds to the film in a camera. So, depending on the distance to which the near-point has receded, convex lenses of varying strengths may be used, and the object which was previously blurred or not seen at all is brought into sharp relief. Because these lenses have only the power to bring near objects into focus, distant objects cannot be seen by the individual through these lenses.

I have thus far been discussing only the individual who experienced normal vision all his life until presbyopia set in. What happens in the case of the individual who has been obliged to wear glasses to see well at a distance? It is generally agreed that the farsighted person becomes more farsighted as he grows older and that he will need stronger glasses to obtain comfort in reading and in doing close work when he approaches middle age. On the other hand the nearsighted, or myopic, individual has a tendency to become less myopic and will therefore need a weaker glass for his near work.

Second sight is a term which one often hears. I shall use as an example a myopic individual who required 1 unit (diopter) in a concave lens to see well at a distance. Of course, in his younger years this single lens sufficed for both distant and near vision; but when he reached 40, he noticed that he could read better without his glasses although he still needed them for distance. This is what happened: His presbyopia increased to the point where he needed the addition of a convex lens of plus 1 unit (diopter) strength to correct that condition, so the minus 1 unit was neutralized by the plus 1 unit which he needed to correct his near vision. Consequently, for a time at least he is able to read well and comfortably without lenses, and this is how the term second sight originated. As he grows older he will require more plus lens to offset his increasing presbyopia; then he will be obliged to wear different strengths for each distance. When one hears of an individual who has never worn glasses and at the age of 60 or 70 is able to read easily, one may rest assured that he was nearsighted, or myopic, in his younger years but did not bother to wear glasses so that he might see well at a distance. If he reads well now without glasses, he is not really seeing well at a distance.

I have spoken of the individual who simply needed glasses for reading, and I noted the fact that he could not see at a distance through those lenses. He is obliged to remove them or switch them to his forehead or down on the end of his

nose when he wishes to observe anything beyond his usual reading distance. Years ago, to offset this inconvenience, lenses were split, and the upper half was removed. This certainly helped; but the cosmetic result was not all that could be desired, and in many instances the lens was still so large that it interfered considerably with lateral and lower lateral vision. The person who wore a correction all the time either changed his glasses to the stronger reading pair or else devised an arrangement whereby he dropped the needed additional glass in front of his lenses or hooked a half portion of his needed additional lens to his frame so that he could still look in the distance through the uncovered part of his usual lens. Later still, "wafer" lenses came in, and thin glass wafers carrying the proper correction were cemented to the lower part of the constantly worn lenses. This surely was a step forward. However, there were still many drawbacks, as air bubbles and dirt appeared between the wafer and the lens; of course good vision was not then possible. Today, because of much intensive research and the expenditure of tremendous amounts of money, one-piece lenses are being produced which contain two different strengths; they are fused so expertly that the "jump" from the upper weaker section to the lower stronger segment is hardly noticeable. The lower segments come in varying sizes and shapes so that individual needs and tastes can be satisfied.

Every one knows that lenses have the power to focus things properly within a short range, and a lens which is added to correct presbyopia has its limitations, as it will only allow the individual to see distinctly over an area of a number of inches. Now only the reading and looking-off distances are corrected, but what about the in-between distances? These distances are the bugbear of all oculists. The cabinet maker, draftsman or portrait painter who works at arm's length cannot understand why the glasses which prove satisfactory for his work are not adequate for reading, or vice versa; and he wonders why he cannot have a lens or combination of lenses which will allow him to see distinctly at varying distances between his reading-point and his far-away point. It is difficult to convince patients that after the age of 40 their vision has not the elasticity that it once possessed and that since they are dependent on mechanical devices to help them in seeing, they must not expect these artificial aids to have the range of power that their eyes formerly possessed.

Trifocal glasses—those with corrective lenses for three different distances—are used by some persons, but they have not been universally adopted. The best results obtainable are procured only by compromise. The individual must understand that he will be obliged to put up with good correction for two major distances and that the lost distances in between will have to be attained by adjustments of the other two; that is, he will be obliged to approach closer to the object and observe it through his lower segment or else get farther away and use his upper section. A second pair of bifocal glasses is sometimes used by musicians, artists and others, but they also are seeing well only at the two distances which they have found they use more than any others. The person who does not need distance correction but for convenience wants a bifocal glass may have a plain glass in the upper section and his needed correction in the lower.

It has been my experience that more than 95 per cent of individuals who start in with two sets of glasses change them at some time for bifocals as this form is more convenient for street wear, shopping and general work. They are not ideal but seem to be the lesser of two evils. Those who read a great deal at one sitting should procure a whole lens made of their reading correction so that they may readily read various parts of a newspaper without having to move their heads or the newspaper so much. The great objection to the wearing of a bifocal with a small lower segment is that the reading area is too limited, and if one likes a larger reading section one must necessarily sacrifice part of the distance area. If these persons would learn that it is impossible for them to see the ground, curbstones or steps through the lower part of a bifocal they would be much happier and would subconsciously develop habits which would help the glasses perform their proper function. One should not expect to see through presbyopia-correcting glasses objects for which they have not been focused. They are such a blessing to mankind that, although they are not all that might be desired, one should be duly grateful, for they are the means of producing much happiness and, in innumerable instances, of maintaining a livelihood.

He switches them to the end of his nose to see anything beyond his usual reading distance.

STOP THAT COUGH!

EARLY in the fall there springs into being a lusty crop of advertisements stressing the merits of this or that "patent medicine" guaranteed to perform the modern miracle of checking all coughs regardless of their origin. STOP THAT COUGH! ONE BOTTLE OF AUNT SABINA'S SOOTHING SYRUP WILL CURE THAT COUGH! shrieks one street-car advertisement. Across the aisle another card states that the conductor, the mailman, the plumber, the housewife, their children, their sisters, their cousins and their aunts all find Flim-Flam a sovereign remedy for even the most obstinate of coughs. Throughout the winter there is called to our attention in street-car posters, on bill boards and in drug-store window displays a host of sovereign remedies for cough.

Is it always advisable to stop that cough? Cough is Nature's effort to remove irritating substances from the respiratory tract. "The watchdog of the lungs," Dr. Chevalier Jackson has aptly called it. Strong sedatives that deaden cough without influencing the cause of the irritation may be harmful if they prevent proper removal of irritants and secretions from the lungs. Spread of the inflammation may result or, through decomposition of retained secretions, poisonous substances may be produced. When the cough reflex is absent, as in toxic children with acute respiratory infections or in the enfeebled aged, the termination may even be fatal. Such patients literally drown in their own secretions. Cough, therefore, often serves a beneficent purpose and should not be checked so long as abnormal secretions need to be removed from the lungs.

Cough is not only a defensive mechanism for the removal of undesirable substances but also a warning of their presence. Only by removing the cause will the cough cease. No single drug can relieve all coughs, because the origin of cough is manifold. Irritation anywhere along the course of the respiratory tract, whether in nose or throat, windpipe or bronchial vessels, lungs or their pleural surfaces, may give rise to cough. All these regions are supplied by branches of a single nerve through whose fibers are sent impulses that reflexly bring about the cough designed for the expulsion of an undesirable invader of the respiratory mucous surface. Because a small branch of this nerve supplies the outer ear, foreign matter in the external auditory canal or inflammation in that area may at times produce cough. Syrups designed to soothe the lungs would have small influence on cough of such origin.

The vestibule of the respiratory tract is the nose. The specific response of the nasal mucous membrane to irritation is sneezing rather than cough, but indirectly cough may follow. In children especially, the commonest cause of cough is trouble in the nose and throat rather than in the lungs. In the child with a cold, nasal secretions constantly drip down the back of the throat. During the day they are swallowed or coughed up with ease. During sleep such secretions may enter the larynx and call forth a paroxysmal attack of coughing, checked with difficulty. In such cases it is the infection in the nose that must be treated in order to check the cough. For symptomatic relief while the curative process is under way, it may be advisable to administer a drug that will lessen excessive secretions. Most cough mixtures on the market contain drugs designed to loosen secretions assumed to be present in the bronchi or lungs, and their action would be harmful rather than helpful in the cough caused by a running nose.

In the youngster who has a mass of adenoid tissue blocking the nasopharynx, secondary infection of this tissue may produce a discharge that will irritate the throat and larynx. Children with enlarged adenoids, moreover, usually are mouth breathers. As a result, the throat becomes unduly dry. The resultant tickle in the throat gives rise to a recurrent hacking cough which will cease only with removal of the hypertrophied adenoids.

An inflamed throat may be associated with the same annoying type of cough. This may occur in the early acute sore throat with dry, bright red surface or may be a constant feature of the chronically irritated throat dotted with small patches of excessive lymphoid tissue. It is the throat cough that is helped by soothing gargles, glycerin cough drops and other means designed to lessen the irritation in the pharynx.

A child with a cold and cough should always be kept at home, preferably in bed. His energies will thus be conserved so that he will be better

able to fight infection. There will be less danger of extension of the disease from the nose into the bronchi or lungs with development of bronchitis or pneumonia. There should be no contact with other children. A noncharacteristic cough occurs early in whooping cough and measles at a stage when these diseases are most contagious. If every child with cold and cough were kept away from other children, the spread of these two diseases would be greatly lessened.

Cough caused by an acute bronchitis may be relieved by many of the cough mixtures on the market, especially if rest in bed is associated as a curative measure. If you are certain of your ability to diagnose bronchitis, a cough mixture bought at the druggist will probably not do any harm unless excessive doses of a heavy syrup upset the child's stomach. But what if the cough is due to pneumonia and not to bronchitis? Or what if it is caused by the presence of a foreign body in the lung? Many a small child has gulped some object into the lungs without the parents' awareness of the fact.

If the foreign body is of vegetable origin, such as a nut or grain of corn, it immediately sets up intense irritation in the lung and produces a pneumonia or an obstructive laryngitis that is fatal unless the object is removed early.

If the object inhaled is of metal, after the first sudden spasmodic spell of coughing there is often no further response until weeks or months later. This symptom-free interval lasts until the low-grade inflammation incited by the presence of the foreign body becomes sufficiently severe to rouse the cough reflex. By this time the mother may well have forgotten the original coughing spell, especially if she is unaware of the cause of the attack. Such a cough may continue for years until the foreign body is discovered and removed.

Long continued cough caused by chronic bronchitis or bronchiectasis may be secondary

By RACHEL ASH

to chronic sinusitis. In such chronically infected sinuses there is continuous production of purulent secretion which frequently overflows from the nose down the back of the throat into the lungs. Such a chronic cough will be cured only by drainage and treatment of the nasal sinuses.

In a certain percentage of cases, chronic cough is asthmatic in origin. Asthmatic individuals are afflicted with spasmodic attacks of cough whenever they come in contact with substances to which they are sensitive. These substances may be breathed in, as in the case of pollens, bacteria, emanations from horses, chicken feathers and wool. Sometimes they form a part of the daily diet. I remember one undernourished, tired-looking child who had been having nightly attacks of asthma for months. Both she and her parents were suffering from lack of sleep. Literally gallons of cough medicine had been swallowed by this little girl. By means of skin tests with various purified protein extracts a decided sensitivity to wheat was discovered. With the elimination of wheat from her diet the attacks almost miraculously ceased, and the child began to gain weight and strength. Only once within the next year did an attack occur. At this time the child confessed that her grandmother, who incidentally disapproved of "all this foolishness," had given her a piece of pie.

In children, cough is rarely due to tuberculosis. In adults with tuberculosis the lung itself becomes eaten away so that cough is a frequent accompaniment of the disease. In childhood, on the other hand, tuberculosis usually lodges in the glands lying at the point of division of the trachea or windpipe; that is, outside the lung proper. Enlargement of these tracheobronchial glands sometimes gives rise to a dry, metallic cough from pressure on the trachea. Most frequently, however, no characteristic symptoms are present. Only a skin test with tuberculin and an x-ray examination of the chest may disclose the disease in its early stages.

Cough sometimes becomes a habit that is continued through a desire to attract attention or because of sheer nervousness. It is not uncommon to see a child who takes pleasure in the attention focused on her cough by her worried parents. Such cough occurs in the daytime only and becomes exaggerated when the child is conscious of being observed. If the parents can be persuaded to assume an attitude of indifference, the cough soon ceases.

The purely nervous cough usually occurs in the overstimulated child, weighed down by a life of excessive activity. This cough, aggravated by excitement and undue fatigue, im-

proves when, through sufficient rest and a change in the child's plan of life, the general health improves. A nervous element may intensify or prolong cough of any origin. Coughing is a useless act unless it serves to remove material from the air passages. When it arises from causes other than the presence of excess secretion in the lungs, cough should be controlled. The mere exertion of coughing may aggravate an already irritated throat or larynx. Self control is a helpful factor in shortening the duration of such coughs.

Finally there is a type of cough that certainly will not be helped by expectorants such as form the basis of the average cough mixture. This is the cough caused by a failing heart. Since such a heart is unable to propel the blood properly, there is stagnation of blood in the lungs and leakage of serum through the capillary vessel walls. The presence of this edematous fluid in the air cells arouses the cough reflex. As a result of the inadequate blood supply a low-grade bronchitis is frequently associated. Only drugs that will strengthen the heart muscle and insure a normal rate of blood flow will put an end to such a cough.

There is practically no symptom from which man can suffer that may not be due to more than a single cause. Cough certainly may be protean in origin. It may arise from so many diverse causes that it would be folly indeed to expect a single drug or mixture of drugs to be a cure-all for coughs in general. If treatment of the nose is indicated, it is certainly waste effort to swallow syrupy mixtures by mouth. If a foreign body is present in the lungs or if the child is asthmatic, candy cough drops will be of small avail. Before continuing indiscriminate treatment of cough, it would certainly seem wise to determine what its origin may be.

You Won't Have to Wait Until Christmas to Find Out

What's in the December Issue

"It was early morning of the day after Christmas," writes *Margaret McEachern* in "Holiday Follies." "The Browns were quite young and quite average parents. They had celebrated what they considered an average Christmas." What happened in the Brown household may happen in yours, for hectic excitement, overeating, irregular hours, battling bargain hunters, prolonged strain and overstimulation leave havoc instead of happiness.

"Let's Make Winter Sports Safer" is the timely plea of *George Randall McCormack,* who points out that the number of persons participating in winter sports is increasing yearly by leaps and bounds, but that the number of serious and fatal injuries attributable, directly or indirectly, to these sports is likewise increasing and, moreover, is increasing out of all proportion to the number of persons engaged.

"Baby's learning starts with his first breath," writes *Katherine Brownell Oettinger* in the second article in her series, "Before Baby Is Two." "Whether he learns poor or useful habits depends on his mother and father, for he learns readily by the hit-or-miss method, if this wonderful chance for correct teaching is not seized."

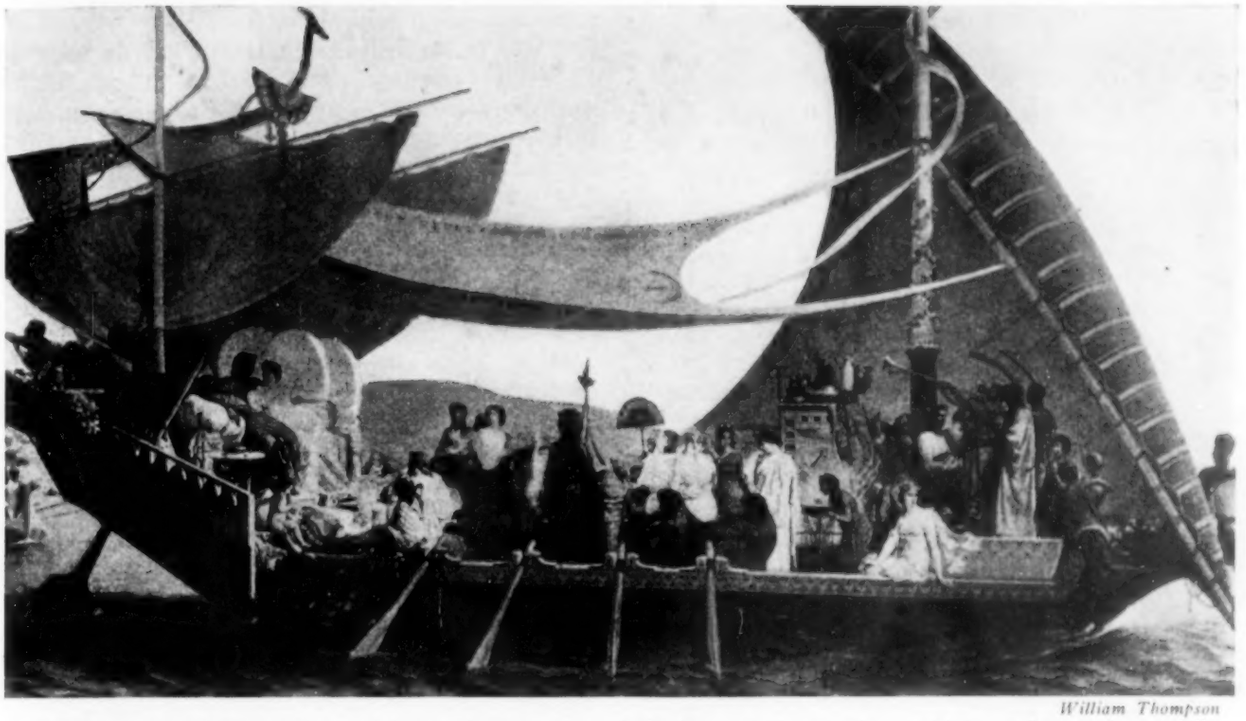
Susan Beach gives tempting suggestions on "Holiday Roasting and Broiling" and reveals more of those culinary secrets that make cookery an art.

What the well groomed Roman, Greek and medieval lady wore in the way of facial adornment and coiffure is described by *Dr. Charles Lerner,* who comes to the conclusion that "after glimpsing over the pages of the past, one finds beauty ever the goal of women, and one begins to wonder what savage or civilized people did not have this weakness!"

Dr. Thomas G. Hull rounds out the year with an article on "A Century of Progress in Medicine," in which he describes the progress that has been made in medical practice, medical care, medical education and health education.

"Elated with the new sensation of being comparatively grown up, and intoxicated with the previously unknown freedom which is usually granted them, they go plunging from one extreme to another," says *Dr. Thurman B. Rice* in his discussion of "The Period of Adolescence."

"Waist-Lines and Life-Lines" are discussed by *Elizabeth M. Koch* in an article on the control of obesity, in which she reviews recent observations on safe and sane dieting. The genial "fat man," the despairing young woman who wants a fashionable figure, the person who "cannot lose weight no matter how little he eats," and many others are considered, and their cases are summed up under two headings: those cases of overweight which are the result of excessive food consumption and those cases of overweight which appear to be refractory to dietary control.



William Thompson

"If the nose of Cleopatra had been shorter, the whole face of the earth would have been changed."

Feminine Beautification:

A Quest from Ancient to Modern Times

PART I

By CHARLES LERNER

AS A peacock preens its plumage, so a woman resorts to various cosmetic artifices to attract the attention of the male sex. In this article, I shall endeavor to scan quickly the pages of history from the remote days to the present and to glimpse over the various beauty formulas and operations to which the ladies of ancient times resorted as aids to Mother Nature.

Woman of the earliest days soon became aware that beauty was like a magnet to the male, and she hesitated at nothing to accomplish her aim, often submitting to many long and torturous proceedings and undergoing treatment with the most nauseating and repulsive concoctions, such as are mentioned in the ancient Egyptian Papyrus Ebers. This famous document yields a wealth of information which to the modern world seems fascinating and at the same time ridiculous.

To preserve youthful appearance, the ancient Egyptian lady used the following concoction:

Bullock's Bile
Whipped-up-Ostrich-Egg
Oil
Dough
Refined Natron
Hautet Resin

Mix into a pap, mix in fresh milk, and wash face daily.

It seems that wrinkles also gave her great concern, for she resorted to the following as a preventive:

Incense Cake
Wax
Fresh Olive Oil
Cyperus

Crush, grind, put in fresh milk and apply to the face for six days.

See to It!

Nor did the lady neglect to care for her locks. Not unlike the modern lady, the ancient woman faced graying hairs and various other scalp conditions with a great deal of concern. Her use of the various obnoxious concoctions gives one an idea of her untiring efforts to retain the youthful appearance of her locks.

The oldest recorded remedy for baldness was prepared nearly 5,000 years ago for "Queen Ses, Mother of his Majesty the King of Upper and Lower Egypt, Teta, deceased." It is mentioned in the Papyrus Ebers. This remedy, together with others, had evidently been copied from previous papyri by an Egyptian scribe. What a formula for a queen!

Toes-of-a-Dog
Refuse-of-Dates
Hoof-of-an-Ass

Nor should her hair tonics be overlooked; among these one finds:

Fat-of-the-Lion
Fat-of-the-Hippopotamus
Fat-of-the-Crocodile
Fat-of-the-Cat
Fat-of-the-Serpent
Fat-of-the-Egyptian-Goat

Make into one and rub the head of the Bald One therewith.

Among many other preservatives and restoratives of beauty was "writing fluid, fat-of-the-hippopotamus, and gazelle's dung"; another, even more vile, consisted of "vulva, phallus, and the black lizard." This beauty recipe contained other ingredients which were indecipherable. Going still further back into Egyptian history, one finds other formulas comprising almost unthinkable ingredients which were utilized for hiding gray hairs: "the-blood-of-a-black-cow," and "tortoise-shell and the neck-of-the-gabgu-bird cooked in oil."

Hair dyes were not overlooked in the art of feminine beautification among the ancient Egyptians, and scanning their numerous formulas, one finds that they were not only unesthetic but actually repulsive. Among the measures recommended are "rubbing the head with the horn-of-a-fawn, warmed in oil; bile-of-many crabs —a messy and smelly mass; dried-tadpoles-from-the-canal, crushed-in-oil; womb-of-a-cat, warmed-in-oil with the egg-of-the-gabgu-bird, and rubbed into the cropped-head."

The eyebrows also required some attention from the Egyptian lady, and the formula which she used to dye them is something to be looked on with considerable aversion. "Crocodile-earth-with-honey-which-has-been-dissolved-in-onion-water, or ass'-liver-warmed-in-oil-with-opium," made into little balls, was rubbed into her brows. To my mind, much must be accorded to these ladies of ancient Egypt for their stoicism in the use of these peculiar mixtures.

Each new excavation in this land of Black Magic and mystery brings to light, more and more, the advancement made in the cosmetic art by the Egyptian lady. There are cosmetic dishes, paint palets, lipsticks, eyebrow pencils, powders, perfumes, and many hair accouterments of that period. The tomb of the Queen Shubad revealed cosmetic dishes, ointment jars, combs, mirrors, hairpins, razors, tweezers, kohl tubes, and peculiarly shaped vessels which apparently contained cosmetics. Other innumerable articles were found in the excavations of other tombs of famous rulers. History informs us that Cleopatra was supposed to have been the most beautiful of all Egyptian queens, and it is believed that under her reign the use of cosmetics reached its peak. But most of her secrets passed with her, for to the present day few are to be found which can be traced to her. In their "History and Trade Analysis of Cosmetology," McNamara and Braden give us an interesting description of the customs of the Egyptian lady of four thousand years ago:

It was the custom of the Egyptian lady to make generous use of cosmetics, and her beautifully carved ivory and inlaid dressing table was always well supplied with appurtenances to beauty which have not changed to the present day. She had silver and bronze highly polished mirrors and alabaster pots filled with black and green eyebrow paint. And she carried abroad a rouge with which she generously dabbed her cheeks as soon as the bustling feet on the city streets had raised sufficient dust to take away the first bloom of her morning beautifying art.

Not unlike the modern lady, the Egyptian woman gave considerable attention to the care of her eyes. She shaped her lashes with a black pomade to make them appear longer and was likewise familiar with the eyebrow pencil and lipstick. The lady of the predynastic period used slate added to the paint to give the desired hue. Perfume was not new to her; she used fifteen different kinds which gave odors to her false wigs, and it was customary to conceal glass globules of her favorite perfume in the tightly plaited tresses. The Egyptians are also credited with the first bathing facilities, which were later elaborated by the Greeks and subsequently perfected by the Romans. According to Maspero, the Egyptian woman of the lower social strata covered her forehead and chin with an indelible tattoo and also painted her lips. Her eyebrows were lengthened to the temples almost to the hair line to enhance the whiteness of the complexion. She greased and oiled her hair and often dyed it blue. Some allowed the headdress to fall about the neck and terminate in tiny balls of earth. This hair dressing was repeated about once every ten or twelve days and in some cases only once a month because the procedure proved to be difficult and tedious.

Cosmetics were extensively used by practically all the ancient nations. Herodotus through his travels also gives an insight into the advancement by the Babylonians in this art. To make their eyes appear larger and more lustrous, they applied the Egyptian kohl, or stibium, to the lids, and also made use of pumice stone and white and vermillion paints. The practice of shading or coloring the eyelids, brows and lashes seems to go back to the earliest ages. The Bible mentions its use in the chapters of Isaiah and Jeremiah; and Ezekiel reproaches the daughters of Israel for painting their eyes to please strangers. The Phoenicians, according to Heywood, "polished" their faces and bodies with sweet unguents and odors and "set their hair in curls and beautified their heads with jewels." The women of Assyria washed and anointed their bodies with essences, dyed their palms and nails red with henna, and finally powdered their cheeks and

darkened their eyebrows. The Athenian women anointed their bodies with perfumed oil and painted their lips. These people were the first to use sunlight as a beauty aid, and history credits them with the first beauty salons (440-330 B. C.). The Greeks and the Romans esteemed perfumes highly and prepared them with olive oils and ointments. Chronologically, the history of perfumes may be traced from the Egyptians to the Hebrews, then to the Assyrians, then to the Greeks and Romans, from whom it passed to the Arabs and, lastly, to modern Europe.

[NOTE.—Dr. Lerner's next article, which will appear in an early issue of HYGEIA, will deal with the beauty quest of Roman, Greek and medieval women.]

HEALTHGRAMS ✣ from Articles in This Issue

¶Athenian women were the first to use sunlight as a beauty aid, and history credits them with the first beauty salons (440-330 B. C.). The Egyptians are credited with the first bathing facilities, which were later elaborated by the Greeks and subsequently perfected by the Romans. *See page 977*

¶Today in our civilized network a greater number of deaths and accidents are caused by the machinery of civilization than occurred within the same period of time in the American army during active fighting in France at the time of the World War. *See page 1016*

¶One mother found that by meeting the various mischievous pranks of her twins with appropriate substitutions, there was rarely a repetition of the same pranks. Although the children remained active, lively little creatures, the element of incorrigibility was gone. *See page 1000*

¶The girl who has been brought up to regard her womanhood as a career, and the boy who is thoroughly grounded in the principles and practice of manliness will probably not make a great mistake in sex life. *See page 1005*

¶Every year finds some player in various athletic sports who thinks that training rules are foolish. The day comes, however, when he finds out that he is wrong. *See page 983*

¶Round or uneven shoulders are common deformities among school children and occur in almost 20 per cent of university students uncomplicated with other postural defects. Flatfoot was found in 217 out of 1,000 supposedly normal students. *See page 996*

¶Anxieties and worries, giving rise, as they do, to so many mental and physical symptoms, are probably the cause of as much misery, sickness and unhappiness as the two great scourges that still afflict mankind—tuberculosis and cancer. *See page 980*

¶Children do not come into this world with a set way of acting. All babies copy what they see. No baby is born with a temper "just like his father" or nerves "just like his mother." *See page 1009*

¶Probably more than 95 per cent of persons who start wearing two sets of glasses change them at some time for bifocals as this form is more convenient for street wear, shopping and general work. *See page 971*

¶New York City, through its board of child welfare, is doing a great deal to make the financial burden easier for the families of residents during the tuberculous patient's stay at the hospital or sanatorium. *See page 987*

¶Some children do not have the right sort of food to eat. They tire quickly and are fussy, and they whine and cry a great deal because they are tired. They do not grow properly either. *See page 1024*

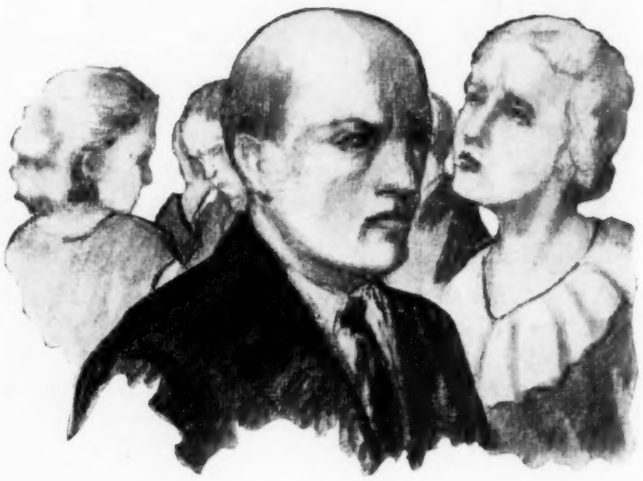
¶Usually, excessive and habitual users of alcohol and other narcotics are persons troubled mentally from a sense of inferiority, from self consciousness, from a feeling of failure or inadequacy. *See page 1011*

¶Honolulu is now being recognized as one of the melting pots of the world. The real pot of paint can be found in the preschool pavilion where tiny tots find no strangeness in mingling with children of other races. *See page 994*

¶Is it always advisable to stop that cough? Cough is Nature's effort to remove irritating substances from the respiratory tract; it is "the watchdog of the lungs." *See page 974*

¶One hundred and fifty-six breads have been accepted by the Committee on Foods of the American Medical Association on the bases of their composition, manufacture and advertising. *See page 990*

ANXIETIES and



ANXIETIES and worries are everyday terms for chronic fears. They affect the body in many ways. They are often partly or wholly the cause of such conditions as indigestion, headache, chronic fatigue, stuttering, rapid heart, eczema, asthma, hysterical paralysis, blindness, deafness, and various aches and pains. These disturbances are also caused by physical conditions. However, I wish to emphasize merely the fact that they are also caused by the emotional strain of anxiety and worry.

Turning from the organic to the mental aspects, anxieties and worries cause lack of concentration, forgetfulness and day dreaming. Anxieties and worries, giving rise, as they do, to so many mental and physical symptoms, are the cause, I venture to say, of as much misery, sickness and unhappiness as the two great scourges that still afflict mankind—tuberculosis and cancer.

There are two kinds of fears: (1) fears of objective dangers, based on reason and caution, and (2) subjective fears, unreasonable and often obsessive, which possess the mind against the will and better judgment.

Objective fears are associated with things in the real world. For example, the fear of being struck by a recklessly driven automobile, of being hit by a bullet in battle, or of being blown up by handling dangerous explosives does not bother people much. Even among soldiers in war, who face death constantly, or among persons engaged in dangerous occupations, such as testing airplanes or working in gas-filled mines, chronic fears are rarely found. Either the person becomes accustomed to the danger or he changes his occupation. In the case of the fear-ridden soldier, the anxiety preys on his mind until he has a nervous breakdown, commonly called shell shock, and so escapes the objective danger. Except in war, therefore, there is little disease caused by objective fears. Even such real fears as arise from the economic insecurity that threatens so many people at this time usually do not cause any serious disturbance, unless there are also subjective fears which enlarge and distort the objective and reasonable fears.

It is the subjective and unreasonable fears that cause so much distress and disease. Such fears may take strange forms and often mask themselves as reasonable and logical fears. For example, some persons use germs to mask a subjective fear. They wash their hands scores of times a day and change their clothes frequently because of the fear of infection. One woman had such a morbid fear of tuberculosis that she burned all the kitchen utensils and fumigated the kitchen because her cook had been visited by her sister, who had a friend who had tuberculosis!

Other common subjective fears are fears of knives and razors; of the number thirteen; of being in open places such as a field or an open square; of being in closed places, such as a room or the subway or an elevator; of buying or wearing new clothes. Many persons are afraid they will not be adequate to some situation, that they may make mistakes and make fools of themselves. Such mild fears are found in the adolescent boy or girl who is afraid to talk in school and who is always a wallflower at social gatherings.

These fears may occasionally take the form of an excessive anxiety that a mistake has been made. Persons suffering from this morbid anxiety must go back several times to see whether the door has been locked, whether the ignition in the car has been turned off, and whether the bathroom tap has been closed. A successful surgeon had to give up his work because he was constantly afraid he had not performed his operations satisfactorily, that he had left something undone and that his patient might die.

There are also persons who feel anxious when they see a cluttered desk or a picture which has been hung awry. Housewives who must have their houses in perfect order at all times and do not realize that their morbid desire for neatness and cleanliness is a symptom of an anxiety state cherish the symptom as a chief jewel in their crowns. Their homes become such places of neatness that the husband and children find the house no longer a home.

Again one finds persons with fears relating to their bodily organs. Of course, one should take reasonable care of one's health and have physical examinations from time to time, but the anxiety-ridden person to whom I have reference shows not a healthy but a morbid interest in his bodily organs and activities. For example, one man goes to his doctor a dozen times a year to

WORRIES

By *Smiley Blanton*

find out whether or not he has heart disease. Another is afraid he has cancer of the stomach every time he has a vague attack of indigestion. These fears of bodily disease are the basis of many fads of diet. It is often said that various food combinations, such as fish and milk, tomatoes and milk, or cereals and fruit juices, are incompatible. Among the commonest symptoms of anxiety are ever present diet fads.

Fears of open places or closed places and fears of knives or razors are called neurotic fears because they are disturbing. The person so afflicted usually tries to get rid of them. He seeks advice and undertakes treatment. Many fears, however, have been absorbed into the personality. They become character traits. For example, the anxious housewife thinks she is doing something fine because she keeps her house so spick and span that no one can live in it. Or the anxious mother may take such precautions to keep her child from getting an infection that she creates in the mind of the child a morbid anxiety about his health. These fears which have become character traits are no longer disturbing. As a matter of fact, they are often defended as being wise and reasonable. Nevertheless, these fears bear fruit often in the form of a chronic fatigue or morbid drive toward work. It is not uncommon to hear of the man who takes pride in the fact that he has not taken a vacation in more than twenty years; often there is a rigidity that makes it impossible for a person to change his mode of life. For example, such a person must always come down on the same side of the street; at home, the bed must always be in the same position in the room, or the same kind of food must always be served in the same way.

When a person suffers from a morbid fear, the usual treatment is to argue with him. How unreasonable, how baseless, how absurd the fears are! This type of treatment is usually quite useless because the fears and anxieties arise from the unconscious mind and rarely can be reached by reasoning, argument or persuasion.

It may be asked, What is the basis of these fears? How do they grow? It is claimed by some that most fears are inherited; but recent experiments with new-born babies have shown that the only fears they inherit are of falling and of loud noises. Most babies also show some fear when they are left by their mothers with strange persons. Aside from these fears, then, the fears that one finds in children and adults have been trained into them through their environment.

Let us consider the new-born baby. He is helpless; he has no moral standards; he thinks only of himself and his own sensations. All the standards and attitudes which make up the adult, the child must learn. The first thing a child must learn is to socialize his excretory functions. There is hardly a child alive today who is not given a sense of guilt or of shame in this process.

Secondly, the child must learn to give up auto-erotic practices, which are common in all children; here the child obtains another and a more profound sense of guilt and shame.

Then the child must learn to have good table manners, to respect the rights of others and to adjust himself satisfactorily to other people. In this training a certain amount of fear and guilt is developed.

I once asked thirty nursery school children, between the ages of 2 and 4, what would happen to them if they were naughty; and there was not a single child out of thirty who did not know what the word meant! They all had an understanding of what it meant to be a sinful, bad, naughty child.

Some parents spend as much as four or five hours a day seeing that the child is fed and eliminates properly. It can easily be imagined how much the effect of such scolding, pleading and nagging may have on developing in the child a sense of guilt and sin, of shame and fear.

Another cause of anxiety in the child is the anxious mother who is afraid her child is not going to be well behaved or is not going to make a good record in school. A child absorbs this anxiety on the part of the parent as a sponge absorbs water. It is not even necessary for the parent to speak; the child feels these anxieties and worries, and they become a part of his mental life.

Anxieties and worries are due primarily to the feeling of sin, shame or guilt in the unconscious mind. These feelings of guilt show themselves in the conscious mind usually as anxiety or worry or sometimes through feelings of inadequacy, inferiority and insecurity. These

feelings of shame and guilt in the child are often the results of parents' too hurried and too abrupt attempts to change the child from an amoral and antisocial infant into a well behaved and perfect child. If the child has some accidents, if he does not always eat with the best table manners, if he likes to get dirty and play with mud pies and wade in the gutter, if he does not always get "A" grades, if he is not always on time at school and is not always obedient, it is not necessarily something about which to worry. Time must be given for the child to pass through the primitive, unsocialized stage.

I do not mean that children should be left untrained. They must be trained, of course. Parents ask, Is it not wise to form good habits in the child? Indeed, yes, but adequate time must be taken for this training.

Children with anxieties and fears are often considered to be models of obedience because they are submissive to the will of their elders. They are always on time in school, always get "A" grades, never talk when they are not supposed to, fear the slightest scoldings and are usually quite obedient. Such chlidren are often called good children; in reality, they are sick children who need help and guidance.

Sometimes the anxiety states in children are exaggerated. Such a case is that of a boy of 8 who is so afraid he will not get to school on time that he gives up his breakfast. Another boy of the same age failed to get "A" in all his subjects at examination time and had weeping spells; he became so deeply depressed that it took several months for him to get over the morbid feeling of shame he had in failing to make a perfect record. Another case is that of a girl of 9 who is afraid to go to bed at night because some danger may threaten her. Even though she sleeps in an apartment several floors up, she is afraid some robber is going to break into the room and injure her. Another is that of a little boy who has been taught by his mother that germs are to be found on old books, and who always carries a clean handkerchief in his pocket so that he can make a cover for the used books he reads.

Stuttering, which is caused by the fear which children have in speaking, is one of the commonest symptoms of anxiety. Sometimes there is no stuttering present, but the child merely fears to talk; when he is called on, he either keeps silent or says he does not know. Such children often fail in their school work even though they may be intelligent. Unfortunately, these fears which children show often continue through adolescence and into adult life.

An example is that of a woman obsessed with the idea that while cooking she may put some cleaning fluid into the food and thus poison every one. Another woman is afraid that she will have an accident with an automobile if she drives on a certain street, which is the most convenient for her. A brilliant writer once said that he had spent half the energy of his life fighting the fear of closed rooms. He said: "I constantly have to make excuses now to open the door. I say that the room is too warm or that I wish to see whether some one has come into the waiting room, or I make some such excuse as this, so that I may open the door and ease myself of the fear that I have of being in a room with closed doors."

One of the chief poets of America, William Ellery Leonard of the University of Wisconsin, has written a book called "The Locomotive God," in which he describes how his whole life has been dogged by handicapping fears.

What treatment can be given for these fears? In the case of children the treatment has been indicated. Give the child time to socialize his excretory functions, to give up his childish practices and to accept the standards of conduct and morality of the group with which he must live and, as far as possible, let parents avoid the anxious, worried, hovering attitude with which so many children are surrounded. Too much parental love is often the cause of anxiety.

Parents must develop a philosophy which will enable them to meet the possibility of danger, accident and death which may occur. Let them take all precautions that reason indicates and then, as the Apostle Paul said, "Stand fast." It must be remembered that there cannot be any guarantee against the dangers of life.

In the case of adults who have mild fears, a philosophy that enables them to face the danger and uncertainty of life would be of help. In some cases it may be wise for the person to consult his religious adviser, for many of these fears show themselves partially as a sense of guilt. But in the most serious fears, reason and philosophy are not sufficient. There is a need of analysis of the deeper levels of the mind. This type of treatment is given by physicians who have studied psychologic medicine. Those who have morbid fears should consult the family physician, who can either help them himself or direct them to some one competent to carry out this type of psychologic treatment.

In conclusion, I repeat that disturbing fears are rarely based on any objective reality; nor can they usually be touched by logic or by reason, for they arise from the unconscious mind and can be eliminated only by treatment which probes this level of the mental life. The chief thing to remember is that there have been perfected by the medical profession methods for treating these fears, whether they are mild anxieties or worries, or the more obsessive fears. It is well to remember that it is not necessary to go through life tortured by anxiety and worry and the usual bodily accompaniments of indigestion, fatigue, headache and the many other unhealthy symptoms that haunt the footsteps of the chronic worrier.

TRAINING FOR ATHLETICS AND HEALTH

By

ALFRED E. PARKER

Knute Rockne

Acme

Chapter XI

Training for Football

CLARK COLLEGE was playing its annual game of football with the state university. As is usual when a small college team meets a large university team, there was but a scattered attendance in the huge stadium. Nevertheless the football atmosphere was there. During the preliminary practice, when the punters were trying out their "educated toes," the familiar thud of stiff sole against the yielding pigskin was frequent.

According to the "dopesters," Clark College with its light team did not have much of a chance against the heavy state university line. As the game proceeded, some of these dopesters were a bit surprised to see their predictions being disproved. In the first half the state university did manage to score a touchdown. The half ended with the score 6 to 0 for the university eleven. Practically all who attended, except the loyal supporters of the small college, had expected to see the university score at least 30 or 40 points the first half.

More surprising still, in the second half when the university team really began to open up their attack, the Clark College men fought like demons, holding their bigger opponents time and time again. Taking the ball on offense, the small college eleven began to gain ground, weaknesses showing up in the university line. Untiringly the smaller team pounded away at these weak points, gaining ground through the line and around right end.

It was the last quarter, and the Clark College team was making its longest gains. Those in the Clark College rooting section yelled themselves hoarse as their team slowly advanced toward their opponents' goal. Then the "impossible" happened. Clark College scored a touchdown!

Of course, there were some who actually believed that the university eleven gave the diminutive team that touchdown. The same supporters thought they were having a nightmare when Clark College scored the extra point, giving them a lead by a score of 7 to 6.

During the next few minutes of play the university eleven made long gains; they played real football, but it was too late. The gun signaled the end of the game.

In the state university dressing-room there was a tense silence. As the university coach walked into that room, the silence became maddening to those who had played in the game.

"Before you go to your showers," said the coach in a clear, firm voice, "I want to say that at least three members of this team have broken my training rules. That fact is plain after today's performance. I'll be in my office waiting, and when those three players have taken their showers I want to see them." With these few words the coach left the room.

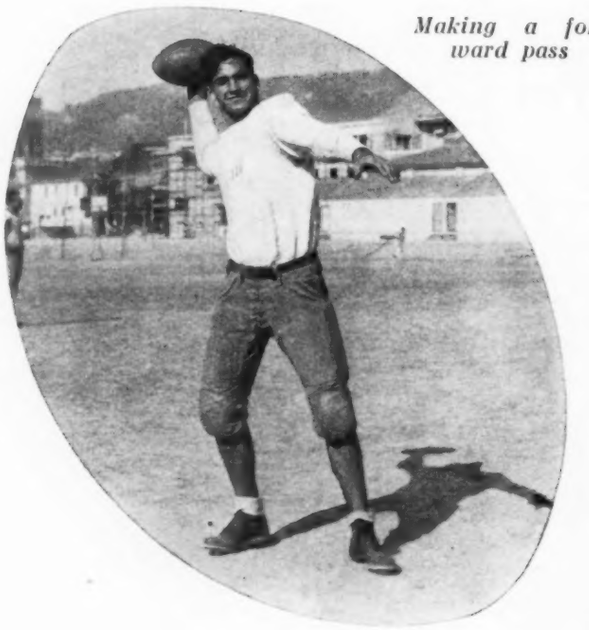
Several minutes later three men—two tackles and an end—knocked on the coach's office door.

"Why did you do it?" asked the coach.

"I guess, Coach," answered one of the players, "we thought we were so good we could get by without training."

The experience that befell this coach is not new. Every year finds some player in various athletic sports who thinks that training rules are foolish. The day comes, however, when he finds out that he is wrong. Years of experience in preparing athletes for contests have proved that training rules are absolutely necessary.

In general it may be said that certain facts apply to training for all sports. No matter what the athletic game for which you are training, the body requires sleep. Sleep is the tonic that reinvigorates worn-out brain and muscle tissue. While you sleep, the fatigue poisons in the blood are eliminated, the blood is purified, and your heart has its only real chance to rest, for during sleep the heart beats about ten beats less each minute.



Making a forward pass

All boys, including those aspiring to high school teams, should have at least nine hours of sleep each night. To be beneficial, sleep should be regular. Go to bed at the same time each night; then you will be benefited. If you are one who boasts, as some do, of how well you can get along on three or four hours' sleep a night, you had better cross athletic competition off your program. Not only will you be a poor athlete but you will be doing permanent injury to your body.

Boys frequently confess to their coach that they cannot sleep. Inability to sleep is usually brought on by useless worry, a common experience especially among inexperienced athletes. To be a real athlete you will have to get rid of worry. This can be done by forcing your mind to concentrate on other subjects. Keep your mind off the game you are playing except when you are actually practicing or competing. A hard job? Yes! But not an impossible one.

To encourage sleep, try reading a light story before retiring. Sleep comes naturally after one has led a normal, healthy life each day.

Like sleep, food is a factor in training. If you eat the right kind of food, you will build strong muscles. That is the reason athletes are asked to eat such foods as coarse breads, meats, vegetables, eggs and fruits; for these foods help to build muscle, and it is muscle that is so necessary in athletic competition. On the other hand, pastries and fats are excluded from an athlete's diet because they are hard to digest.

Not only must you know what kind of food to eat; you must acquire certain habits of eating so essential in successful training. Overeating is a common fault among boys. It is often caused by eating between meals; this an athlete should never do. Overeating throws an unnecessary burden on the digestive system. Forced to take care of an excess of food, the body fails to handle it all.

So, you see, eating correctly requires the exercise of judgment on your part. When you sit down to a meal, make it a pleasant affair. To eat hurriedly impairs digestion. Try to engage in enjoyable conversation while eating, and the result will be more time taken in chewing your food, with a beneficial effect on the digestion.

Every year many boys ask me whether this or that food is all right to eat while in training.

Stance of a lineman (front view)

Now in practically all instances the regular food that you get at home is as good as could be desired. However, these questions come so often that several sample menus are offered here for your consideration. They are well balanced and will help in building the tissues of your body:

Breakfast.—One dish of fruit, such as prunes, apricots, apple sauce or any fruit in season; 1 dish of breakfast food, such as oatmeal, wheat mush, flaked wheat or corn, puffed wheat or rice, or wheat, shredded; 2 eggs, which may be boiled, scrambled or poached, but not fried; 1 glass of milk; 2 slices of toast with butter.

Lunch.—Light broth or soup with crackers; creamed or baked potatoes; a small portion of cold meat; 2 slices of bread with butter; custard, plain pudding, a baked apple or fruit in season for dessert.

Dinner.—Steak or roast; baked or boiled potatoes; 1 dish of creamed celery or peas, spinach, cauliflower or carrots; 1 glass of milk; 2 slices of bread with butter; fruit in season or ice cream.

Here is another daily menu:

Breakfast.—One orange, sliced; 3 tablespoonfuls of rolled oats with 4 tablespoonfuls of cream and 2 teaspoonfuls of sugar; 2 slices of graham toast with 2 pats of butter; 2 slices of bacon; 1 glass of milk.

Lunch.—One cupful of tomato soup; 2 scrambled eggs on toast; 1 slice of bread with 1 pat of butter; 4 tablespoonfuls of cooked apricots; 1 cooky; 1 glass of milk.

Dinner.—Three tablespoonfuls of beef stew with vegetables; 1 baked potato; 2 slices of bread with two pats of butter; 3 tablespoonfuls of spinach; 1 dish of ice cream; 1 glass of milk.

On the day you are competing in a contest your diet will vary with the sport and must be considered under each separate sport. In presenting the foregoing sample meals to you, one other important fact must be mentioned. In the past some coaches have placed a taboo on drinking water. Modern medical science teaches that the body requires a certain amount of water each day. If you drink from 6 to 8 glasses of water a day, except on the day of competition, no harm will result. Common sense tells you that you should not wash your food down with water.

Besides the food problem, training for athletics requires that you must face the smoking question. Practically all coaches forbid smoking. They are right in doing this because smoking seems to impair the wind. In these days, when tobacco is used widely among young people as well as old, boys competing in athletic sports must develop sufficient will power to abstain from smoking. You want to make the team; you want to excel in your favorite sport. If that is really true, do not smoke.

Stance of a lineman (side view)

For a moment let us read what some of the most famous coaches in the United States think about smoking. An article by Allan L. Benson in *Good Housekeeping Magazine* for August, 1929, contains the following statements:

Boys who are considering the advisability of adding to their pleasures by taking on this habit that has hurt and tantalized so many men might be interested in what athletic directors say. These directors have no fish to fry. The opinions they express are based upon nothing except what they have seen tobacco do to young men. If it had been demonstrated to them by observation that a cigarette smoker could run as well, row as well, or play ball as well as a non-smoker, they would be free to say so. But most athletic directors say nothing of the kind. The great majority are very emphatic in saying that tobacco takes something from young men and that those who wish to do their best should let it alone.

Knute Rockne, director of athletics at the University of Notre Dame, whose success is the envy of every coach, says: "My experience has shown that tobacco slows up the reflexes of athletes and lowers their morale; it does nothing constructive. Athletes who smoke are the careless type and any advertisement that says that smoking cigarettes helps an athlete is a falsehood and a fraud."

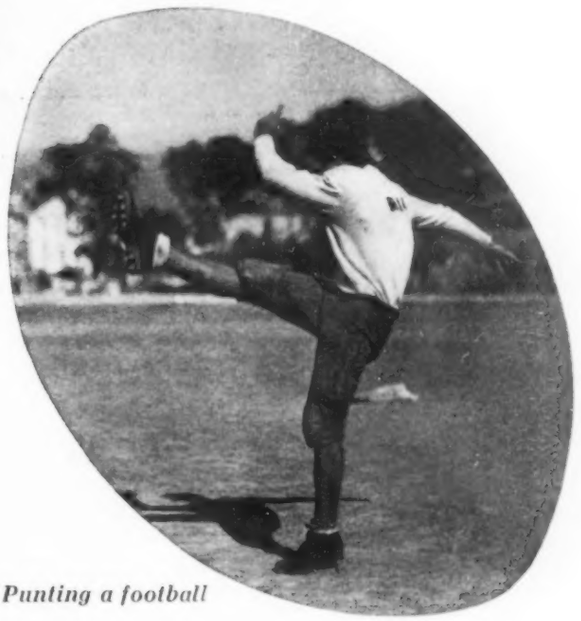
M. A. Stevens, of Yale: "From a medical and coaching viewpoint, I am firmly convinced that any boy interested in athletics will do well to refrain from using tobacco in any form. Yale football players are not allowed to use tobacco during the active training season."

Fielding H. Yost, University of Michigan, for thirty-five years connected with college athletics: "I have never known any coach or any trainer of athletic teams to advocate the use of alcohol or smoking in any form as beneficial to the development of athletic capacities and abilities. In fact, the very opposite is true."

L. McC. Jones, head football coach at the United States military academy at West Point: "Any stimulation for an athlete in training is bad. Tobacco is forbidden on our squad during the season."

Ty Cobb: "Cigarette smoking stupefies the brain, saps vitality, undermines one's health and lessens the moral fiber of the man. No boy who hopes to be successful in any line can afford to contract a habit that is so detrimental to his physical and moral development."

There seems to be no end to the amount of evidence that can be secured against the tobacco habit. To be a successful athlete you will have to leave it alone. That may require much effort on your part. And the effort required is wholly mental, for whether or not you are able to train your body in the right way for an athletic game depends largely on the mental attitude you have toward the sport. If you are serious with yourself, you will realize your responsibility to your school, to your coach and to yourself. Most important of the three is your responsibility to yourself. By taking athletic training rules seriously you are giving your body the chance to build itself to the full



Punting a football

extent. Such a possession will be of value to you throughout your life. Never should you take the attitude that because training rules forbid certain things you are being abused. Everywhere, all over the land, are hundreds of boys who are keeping in training. If they can, so can you.

So much for general training rules. But now let us consider specific sports and see how you can best train for them. First of all, perhaps, in the minds of most of you comes football. And here is the message one university coach gave to a group of high school football players:

> A boy who expects to make a school team should keep in training all the time—the year round. College men can break training for a time and as they are more mature they can get back into shape in a short time. The same is not true of a boy. A boy's muscles have not completely matured, the bones are not completely set; so, for these reasons, he should attend to training his body twelve months in the year.
>
> Training for football should consist of plenty of sound sleep, for the body builds itself up while you are asleep. Smoking affects a boy's nervous system and should not be indulged in. As to eating, the wholesome food given you at home will serve you well. Eat your meals regularly and refrain from eating between meals. . . . When certain foods do not agree with you, leave them alone.
>
> Boys should always tell their coach if they feel irritable, and especially if they have not been sleeping well. To give such information to the coach is not being a "sissy" at all; it is being wise, for the coach can give you real help in getting back into first class condition. If you find that you are very tired at the end of a game, you should check up on your training program; you have slipped somewhere, cheating your body of its full amount of vitality.
>
> Football is a bodily contact game and because of this fact the body must be in excellent condition to stand the hard bumps. You can condition yourself for this game if you will be faithful in training yourself, not only during football season but every month in the year.

The advice given by this coach is excellent. Follow it. Training for football requires more, however, than building up a healthy body. You must train the big muscles of your body to do a special job.

In further comments about how you should train for football, the same coach said:

> Every boy aspiring to be a football player should make a special effort to build up his muscles. This is a year round job, but special attention can be given to it during the summer vacation months.
>
> I would say that a boy ought to get out into the open in the summertime. Hiking is excellent for building up the leg muscles and the wind. Chopping wood, mowing lawns and general physical work also contribute to muscle development. Of course, if a boy is sufficiently interested, and I have known many who are, he can faithfully work at setting-up exercises which will enlarge the shoulder and leg muscles. I have even known boys who have fixed a sawdust pile in their back yard upon which they learned to fall and roll. Such practice is undoubtedly beneficial. Honest effort in trying to build muscle is always rewarded, and football is a game requiring strength and suppleness of muscle.

Perhaps you are interested in becoming a backfield player. If so, you should know at the outset that the muscles you will use must be trained quite differently from the muscles used by a lineman. Playing a backfield position requires quick action of the muscles used in starting and dodging. Passing, tackling, catching the ball and running interference all require special training in suppleness of muscles. You must have almost perfect control of nearly all the large muscles of your body. You can acquire this quickness of muscles by playing a number of games such as handball, tennis or volley ball. Such games require of you quick shifting; they train you in rapid muscle control.

Then to fit yourself for a backfield position, you will do well to practice quick starting like that acquired by the sprinter and, like a track athlete, you should learn to run fast. Naturally some of the muscle training for backfield positions must come in actually playing the position. To acquire muscle control in kicking a football, kick a football; to learn to pass a football, spend much time passing a ball; and to train the muscles in tackling and catching a ball, participate in these fundamentals of the game.

To be a lineman you will find it necessary to use the muscles of the legs, back and shoulders to an even greater extent than a backfield man. Playing on the line requires a vast amount of strength and endurance. You have to learn how to shift your weight quickly. By squatting and then walking you will bring into play many of the muscles so necessary to the lineman. The boy who will work faithfully at the "squat and walk" exercise from five to ten minutes each day will go far in conditioning his leg muscles. The lineman can also obtain excellent muscle development for his special job by practicing starting and by running with the knees high. In addition, weight pulling and setting-up exercises for the chest and back will be well worth while.

There is one line position, that of center, which requires special training. The center is the pivot man of the team. When he is accurate with his passing, the team usually works smoothly on offense. Several years ago an awkward young man signed up for football at one of the largest universities in the United States. On being asked what position he was out for, this football aspirant quickly made known that he wanted to play center.

"Have you ever played center before?" asked the coach.

"No," replied the football enthusiast, "but I'm willing to try."

In his mind the coach was a bit skeptical about this young man's chances of ever being a center. Nevertheless, he gave him a football, and drawing a circle on a board fence with a piece of chalk he told him to practice passing the ball at the mark. *(Continued on page 1040)*

Must the Tuberculous Be Dependent?

By Edward Hochhauser

"Where garments are well made and patients made well."

CAN the tuberculous work? Our radio friend Andy would say "Yes and no, but mostly no." My answer, however, would be more and more "yes" and I should add that in many more instances it can be "yes," provided the man or woman, boy or girl who has tuberculosis is willing and is given a fair chance.

Diagnosis, particularly in the early stages, is not so easy as my good old French Canadian friend thought it was: In one of the mill towns in Rhode Island I called to see a patient who was reported in need of hospital care. "Oh, our doctor found that my daughter-in-law had tuberculosis the first time he called. All he used was a spoon, and he looked down her throat and saw the spots on her lung," was his reply. But accuracy in the early stages is possible only with modern instruments of precision in the hands of competent physicians.

One can appreciate the importance of early diagnosis when one realizes that the chances of recovery and the return to a useful life become increasingly smaller as the patient, his family and the community permit the disease to advance. One speaks of the disease as being in the first or early stage, in the second stage or in the third stage. A large and well managed sanatorium, studying the experiences of its graduates, found that the patient in the first stage had twice as good a chance as the one in the second stage and more than five times as good a chance as the patient in the third stage. Of course, some patients in the third stage and considerably more in the second stage have recovered sufficiently to return to work, but what handicaps they had to overcome!

As many professional and lay persons know, there is no fight as difficult as the one against

tuberculosis. Even when the patient is feeling better or entirely well, he is afraid of another breakdown and years of invalidism, of inability to work and of dependence on relatives, friends or the community.

New York City, through its board of child welfare, is doing a great deal to make the financial burden easier for the families of residents during the patient's stay at the hospital or sanatorium. The city is interested in having the patient stay at the sanatorium as long as is necessary for his welfare, as well as in protecting the patient's family and neighbors. Inadequate treatment usually means waste of money and, what is more important, waste of time and a more aggravated condition of the disease. The monthly pension for the wife and children enables the patient to apply himself to the fight for renewed health, free from this worry. Incidentally, it is a fight that calls for courage, the will to get well, and a sense of humor.

Must the tuberculous be dependent? Not after they have had adequate treatment, and the disease has been arrested so that they may return to work, provided, first, that the patient has an opportunity to work into either a part-time or a full-time job, as the doctor sees fit. Here the old employer can be of great assistance. Many employers, indeed, find that it pays to reemploy their former employees who have arrested cases of tuberculosis. A large corporation whose employees number more than 100,000 has adopted a comprehensive scheme of reemploying such men and women. Corporations spend millions in promoting good will and better understanding. Here is a concrete program of good personnel practice. Any one interested can have the facts as to what can be done and how to do it.

For the part-time worker who needs graduated work under careful supervision, one must provide a stepping stone from the sanatorium to a full-time job. In New York City there is a sheltered workshop, the Altro Work Shop for the tuberculous, where 125 men and women are employed, making all kinds of uniforms for institutions, hotels, restaurants and industrial concerns. Limited sales have made it necessary to limit the number employed.

The mid-Victorian business man still believes that once a diagnosis of pulmonary tuberculosis is made, the patient is crippled and doomed to chronic illness and dependence. Although he may have read that the number of patients dying of tuberculosis has been cut in half in the last twenty years, he has also heard of several patients who came home from the sanatorium only to go back again. One must admit that the number of breakdowns are relatively large —much larger, indeed, than is necessary, as has been shown by the committee conducting this workshop. A large percentage of these relapses are among patients who are not ready for a full-time job or have not learned that the first three years after release from the sanatorium are the test years which will determine whether they are to stay well.

If I were to discuss this problem with members of the legislature or with large contributors to charity, I would point out the wastefulness of inadequate supervision or the lack of opportunity for rehabilitation during the trying early years after the discharge of the patient from the sanatorium. While the greatest waste is the human waste, several billion dollars are invested in hospitals and sanatoriums, and several hundred millions each year are spent on maintenance. One likes to know that that money is spent to the greatest advantage.

I said there were two considerations if the patient is not to be dependent. I have stressed the first point—the chance to work as he may be physically able. The second consideration is by no means of minor importance. It is the will, the desire to work, on the part of the patient himself. Long months of enforced leisure, coupled with an overwhelming fear of breakdown, establish a mental hazard in the tuberculous which often presents more difficulties than the physical hazard caused by the disease.

The unique workshop mentioned proves that it is possible to salvage many from the economic scrap heap and a life of uselessness. It gives these patients a real chance to come back and strengthen the hands of those trying to meet the problem. "This is salvation through work" was one visitor's observation, while one of the directors of the workshop spoke of it as the place "where garments are well made and patients made well."

In these shops the patients are treated as sick persons trying to get well, not as paupers whose desire for work is being tested. They know that the uniforms they make are sold on a business basis, that the standards of workmanship are high and the wages at least equivalent to the trade union standard for work performed.

For many of the patients, particularly for the man with a dependent family, there is a scheme of subsidizing wages. If the earnings are inadequate, they are supplemented through a special philanthropic fund so that the patient is assured of a weekly income sufficient for his or his family's needs even though he works only three hours a day.

The doctor plays an important part, for he is the "boss"; he determines the hours of work on periodic examination.

In appearance the workshop looks like a factory. Its equipment is of the best: special posture chairs that touch the right spot in the back; clothes dryers with a change of clothing for workers caught in a storm; an attractive dining room, and indoor and outdoor rest and recreation rooms. A time clock is used so that the patients do not work too long. Specially

The plan provides for rehabilitation as the first objective and work as stimulating activity.

constructed windows assure ventilation in winter and summer. Not only is there an ideal sanitary control of the patient and the conditions of work, but an ingenious pressing arrangement, utilizing live steam superheated by electricity, sterilizes as well as presses the garments and adds to their attractiveness.

Yet there is nothing about this workshop to suggest an institution. It looks like an ideal workshop and is conducted under a style name. The workshop has dramatized the possibility of returning the handicapped to restored health as useful men and women.

Last year the patients earned more than $83,000 in wages. Before more patients can be served, the sales must be increased (in 1931 these sales approximated $210,000), and the factory must be enlarged according to the original plans, which were not completed because of lack of funds.

There are many patients in the more advanced stages of tuberculosis who are no longer acutely ill or in need of hospital care, and who are able to do some work; but they are kept at hospitals because of the limited part-time work facilities. Instead of being condemned to the scrap heap, they are made of use to themselves and to their family by the opportunities offered in this shop. Instead of becoming a liability to the community by occupying a hospital bed urgently needed by the acutely ill, many patients of this type now at the workshop are self supporting.

When the workshop patient has reached eight hours a day and continues to feel well, he is examined by a medical committee of three specialists. If in their opinion he is ready for a normal life, he is congratulated on his recovery and advised that he is now ready for regular industry. Today there are twenty such patients seeking jobs; they are ready to graduate from the sheltered workshop. With the girl graduates looking forward to a normal life, the doctor invariably is asked, "Will it be all right for me to get married; and if I have a baby, will he be well?"

On Thanksgiving, one workshop graduate sent a contribution of $25. He entered in 1917 with a moderately advanced case of tuberculosis, with prognosis doubtful; that is, the doctor thought that the chances for rehabilitation were uncertain. It took several years before George was able to work eight hours a day. He was graduated from the workshop and returned to his old work, building construction. Today George has a family of his own, is not only self supporting but is able to make contributions to the workshop which assisted him.

The workshop, now in its eighteenth year, has been in its present building for seven years. In the invitation to the dedication of the new building in 1925, one reads, "The business of this unusual manufacturing enterprise is that of giving the convalescent tuberculous paid employment, and of allowing them to do only the amount of work per day for which they are fitted. A time clock and a trained nurse see to that. The balance of their time they give to development of hope in their hearts and health in their own bodies. This turns invalids into men; and men can compete in the open market, just as the wearing apparel made by them during their working hours competes in the open market, on a quality basis."

A Housewife Looks at the Committee on Foods

By Doris W. McCray

II. The Committee on Foods Accepts Bread

WHAT does the Seal of Acceptance of the Committee on Foods of the American Medical Association mean on the loaf of bread which you buy? Why should you choose it in preference to other loaves and encourage your friends to do the same?

Because I am a housewife with your same problems, with a background of work in food and nutrition, and a keen interest in food, I shall discuss these questions with you.

You can see, from the list of members of the Committee, the importance of the positions they now hold. Because you have been busy washing nursing bottles, reading stories, planning meals, attending baseball games and performing the hundreds of tasks tremendously important in the job of keeping the family together and happy, you probably have not had time to read the scientific publications, reporting the research in nutrition and food chemistry which the members of the Committee have done.

The Committee carries this work on foods forward without remuneration, giving of their time and vast knowledge in the interest of public welfare. The secretarial work and necessary expense of the work of the Committee is a part of the educational and public health advancement program constantly being carried on by the American Medical Association.

The Secretary of the Committee, with his assistants, handles the details of preparation of food submissions and problems for consideration by the Committee. The Committee makes decisions which are possible because of its background of knowledge of nutrition.

Each submission includes such information as the manufacturing formula, chemical analysis of the product, specifications or definitions of all ingredients, description of manufacture and packing, and, when necessary, vitamin assay. The advertising is carefully checked for the attention of each Committee member. The Committee scientifically passes on the samples, information and material provided, each Committee member making criticisms from the standpoint of his own particular knowledge and experience. After due consideration a decision is obtained as to whether the product and advertising will be accepted as they are or after certain changes have been made in the composition, the manufacture or the advertising. Acceptance may be withdrawn at any time that it is discovered that a food is unwholesome or new claims made for it are false.

All "health" or nutrition claims in any of the advertising must fairly represent the facts concerning the food. Such claims shall not be misleading. Both the product itself and the advertising concerning it are thoroughly investigated before the Seal of Acceptance is given.

The women of America are learning to look on this work of the American Medical Association as a public service, conducted along the highly ethical lines of other activities of this organization.

Acceptance by the Committee cannot be bought. There is no charge to manufacturers for any of the Committee's activities. The use of its seal can be obtained only by compliance with the rules, which require that certain information, data and material shall be submitted to the Committee for consideration. The exact material required varies somewhat according to the food being investigated, the purpose of the Committee being to ascertain whether the food is wholesome and fulfils all nutritional requirements and whether the advertising claims are correct.

Let us consider how a baker gets acceptance for his bread, and the right to use the Seal of Acceptance on his bread wrappers and in advertising copy. He first obtains a list of the material required, which he sends to the Committee. This includes:

1. The name of the product. (There are certain requirements regarding a name. It shall not mislead or misrepresent. In some cases, the name of a bread has been changed to meet these requirements.)

2. Name of manufacturer or distributor. (This is for the purpose of identification and to ascertain who shall be held responsible for the

quality of the bread and for the claims that are made for it.)

3. Three loaves as marketed. (This is for the purpose of determining whether the bread is a wholesome product. If there is any special reason for further investigation, additional loaves are furnished.)

4. Fourteen copies of each piece of advertising in use or intended for use in the immediate future, including booklets, leaflets, magazine or newspaper advertisements, window displays, photographs of billboard advertisements, radio copy, and the like. (This is for the purpose of checking to see that claims made for the bread are not false, misleading or exaggerated, that they are in accordance with present knowledge of nutrition and that claims for the composition and physical characteristics of the bread are valid.)

5. Fourteen labels. (Some restrictions have been made regarding labels, which will be discussed later.)

6. Baking formula. (The purpose of securing this information is to make certain that no ingredient that is harmful or abnormal for bread is used, that the ingredients are such as will produce a bread of the kind advertised and that the ingredients are in proper proportions. There are specific requirements for different kinds of bread. For example, "milk bread" has been defined in part by the Department of Agriculture as the product obtained by baking a leavened and kneaded mixture of flour, salt, yeast and milk or its equivalent, milk solids and water, in proportions normal to milk.)

7. Chemical analysis of one entire loaf of bread taken one hour after baking. (Analysis shall be made as directed by the methods of the Association of Official Agricultural Chemists.) This analysis is published in *The Journal of the American Medical Association*, which is read by physicians and dietitians, who find the information useful in prescribing diets.

8. Description or definition of each of the baking ingredients. (This information enables the detection of any ingredient which might be unwholesome, harmful or not normal to bread.)

9. Brief description of manufacture and packing. (This is for the purpose of knowing that the bread is made in a satisfactory manner and according to standard methods.)

If the information furnished by the manufacturer is inadequate in any particular, if unwholesome or improper ingredients are used, or if any other detail indicates that the bread is not what the careful housewife would want to buy, the Committee calls for the necessary

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additional information, changes in the ingredients or methods of manufacture before finally rendering its decision. This detailed procedure is necessary in order that accepted breads may be purchased with confidence.

Each bread submitted is given thorough consideration by the Committee, whose members are unbiased by commercial affiliations, being prominent in their positions with public educational institutions.

The statements regarding white bread in the advertising of the American Institute of Baking have the approval of the Committee. The term "bread" when not qualified refers to white bread. The American baker supplies the public with both white and whole wheat bread. White bread is almost completely digested, as compared to whole wheat bread, which contains roughage or indigestible material which is laxative in its effect. Both are nutritious and wholesome. Whole wheat flour contains more of vitamins B and G, more iron and phosphorus. Since these are readily obtainable in vegetables and fruits it is not necessary to eat whole wheat bread, although it is often preferred because of its flavor.

The Committee on Foods does not permit use in advertising of the term "balanced" in reference to the classes of nutrients in bread, for the nutrients of bread are not proportioned to make bread a complete food or one which meets all nutritional needs. In reality, there are no such "perfect" foods, nor is there a necessity for them. Even though bread were perfect in its proportions of fat, carbohydrate, protein, minerals and vitamins, making it the one ideal human food, such a "scientifically balanced" food would be entirely impractical, since no one wants to "live by bread alone" and every one would insist on eating some other food! Where the term "balanced" is used in advertising any food, explicit statements must be made which are informative, correct for the food as used in the diet, and free from misleading implications.

While certain persons at times are given bread and water temporarily, our usual combination of bread and butter, or bread and milk, is more appropriate nutritionally. If to this are added the protein of meat, fish, eggs or cheese, and also a succulent vegetable or fruit, one has a meal which is suitable for the normal person. The flavor of bread combines well with all other foods.

Bread is a splendid source of calories for energy. Bread yields approximately 1,200 calories a pound, 80 per cent of which are provided by carbohydrates. The type of carbohydrate and fat found in bread is digested. When bread is the sole food, its protein is inadequate in nutritional quality. The addition of meat or milk corrects this inadequacy. Bread is readily digested. If used alone, it may furnish sufficient phosphorus; it is deficient in calcium, which is usually supplied in the milk in a meal. White bread is practically lacking in all the vitamins and provides little iron; whole wheat bread is a good source of vitamin B and of iron.

We see where bread fits into our daily meals. It is essentially a low priced carbohydrate food which can be used to a great extent to furnish heat and energy. Bread is wholly desirable in the diet of the normal person.

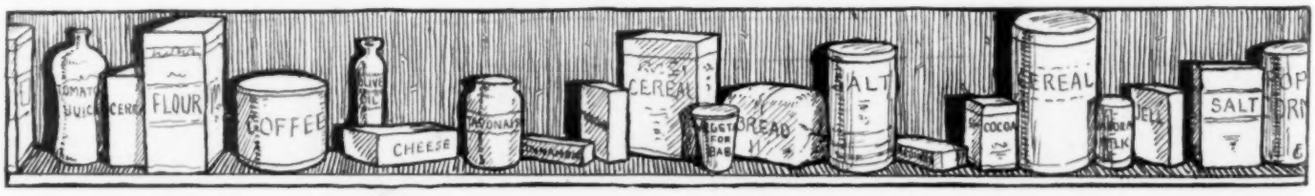
One hundred and fifty-six breads have been accepted by the Committee, under the following classifications: brown bread, butter bread, milk bread, raisin bread, rolls, rye bread, salt rising bread, skim milk bread, vitamin D bread, vitamin D whole wheat and white flour bread, wheat bread (whole wheat flour and white flour or vice versa, the first named ingredient being present in largest amount), white bread, whole wheat bread, and whole wheat combination bread (containing other kinds of flour in addition to wheat).

Names may be colorful and full of meaning, suggestive of quality, wholesomeness or deliciousness, because of the words themselves or their associations in the mind; but they may not misrepresent.

We shall consider some of the breads which have not been accepted and the reasons for their rejection as published in *The Journal of the American Medical Association.*

A white bread advertised as a milk bread, but containing skim milk instead of whole milk, was submitted to the Committee on Foods. The skim milk solids content was much lower than the required whole milk solids of a true "milk bread." The name was therefore misinformative.

In a similar manner another bread, falsely advertised as a cream bread, was not accepted. The name implied that the bread contained enough cream or milk fat to give it characteristics and nutritional values different from those of ordinary bread. In the baking formula, no butter or cream is used; lard is used instead. The name "Cream Bread" therefore is inapplicable. The manufacturer was unwilling to change the trade name or the baking formula; therefore the bread was not accepted. Rejected foods are not elegible for advertising in the



pages of HYGEIA or *The Journal of the American Medical Association.*

The Committee considers that a baker has no right to name a bread "Butter Krust" if it does not contain a material quantity of butter or if butter is not spread on the crust, while still hot, in sufficient quantity to give the crust a distinctly buttery flavor.

"Rich as butter" signifies that a bread is equivalent to butter in nutritional and caloric values. When the baking formula does not include any butter, this statement becomes particularly absurd and misleading. The name "Butter-Nut Bread" indicates that the bread contains either "butter and nuts" or "butternuts." Since the baking formula for certain submitted butternut breads does not include any of the ingredients, the name is misinformative.

The terms whole wheat, entire wheat, and graham as applied to flour and bread are synonymous. They should be used as food names only when the sole cereal ingredient is whole wheat. The definition of whole wheat bread, as given by the Department of Agriculture, states that all the flour shall be whole wheat flour. That department requires that the flour ingredient of white bread shall be white flour of wheat only and that the other farinaceous ingredients shall be not more than 3 per cent of the flour. In both whole wheat and white breads, "the ingredients are flour, water, salt, and yeast, with or without edible fat or oil, milk or a milk product, sugar and/or other fermentable carbohydrate substance. It may also contain harmless yeast foods. It contains, one hour or more after baking, not more than 38 per cent moisture."

A whole wheat bread called "Wheatall (100 per cent Wheat) Bread" was submitted to the Committee. The name implies that this is a usual whole wheat bread, and it does not indicate the presence of any material quantity of an unusual and undeclared ingredient, flaxseed. The label bears the legend, "A new bread made of fresh crushed wheat—a whole grain by a new process," leading the purchaser to believe that the process of making and baking gives the bread its flavor and character. No mention is made of the ground flaxseed which is an important, disguised ingredient and which should be appropriately declared on the label. Another statement reads, "A positive aid to digestion and regular body functions," which in part implies that the product is capable of digesting other foods. There is no ingredient or characteristic of this bread which makes it aid digestion. In fact, no bread is a digestive aid. The manufacturer was given this information but was unwilling to change the name and label. Therefore the product was not accepted.

Pictures of potatoes on the wrapper of bread lead one to believe that there is considerable potato flour or potato in the bread and that its flavor and characteristics are different from ordinary white bread. While a rose by any other name might smell as sweet, we are inclined to think that a plain white bread under the name "Potato Bread" is misbranded. In certain so-called potato breads submitted to the Committee, the amount of potato in the formula was found to be so small as not to affect the quality of the bread or give it a flavor different from that of any other white bread.

The Committee on Foods helps the housewife in her daily tasks. Its Seal of Acceptance on the loaf of bread she purchases assures her that this "staff of life" is a strong, substantial one. The young homemaker pictured has added several decorative notes to make a tempting sandwich loaf and some delectable "open" sandwiches of various kinds.

Usually a manufacturer is extremely anxious to have his foods accepted by the Committee and is willing to make any required changes in composition or in advertising claims. Any new types of advertising claims for accepted foods must first be submitted to the Committee before they are used. This is an important requirement, for otherwise incorrect and improper claims may be adopted for foods that have been accepted. Fraudulent medicines, time after time, have been exposed as worthless or harmful, in the past; now the American Medical Association is giving attention also to foods. In cases of flagrantly bad *(Continued on page 1044)*

A Hawaiian Kindergarten

Where East Meets West

A public health nurse and an interpreter demonstrate the correct method of bathing the baby.

By Helen M. Holt

HAWAII—the tropics—Honolulu looms up on the blue horizon of a new dawn as our white ship drifts slowly into port. We have finally arrived where the sun is ever shining and the people ever wear a smile, where one may see the glamorous Waikiki and the tragic Pali.

All this beauty is the traveler's heritage; but it was indeed luck for me in my lone puttering about to come on one of the sweetest and most precious pictures of the whole island—the children of the varied inhabitants in their jewel-like setting of the kindergarten.

Constantinople, Shanghai and even San Francisco are among the romantic cities that are said to be the melting pots of the world. Honolulu is now being recognized as one of the places for having a variety of colors also, but one would hardly expect to find the real pot of paint in a preschool pavilion. Here yellow and black, cream and white are mixed and intermingled by tiny tots who find no strangeness whatever about it.

Picture a semitropical compound surrounded on three sides by large trees, luxurious green plants and vividly colored hibiscus. On the fourth side is the knee-high screened lanai (porch) of the spacious, quaintly decorated playrooms for the preschool children of this island. Plenty of opportunity is given to catch the soft breezes blowing through these shady rooms. Low tables, chairs, and shelves for books and tools are practically the only furniture. Huge packing boxes, or I should say potential elements of the zoo, are in the process of construction, but they do not make the room appear overcrowded. A visit has just been made to the only zoo on the islands at Waikiki, and the present project is a favored one. Just now it is the children's hour of rest. The floor is covered with little grass mats on which the children are stretched.

Such a conglomeration of faces makes me strangely curious as to the children's reactions to one another. What about the Korean boy next to the all-conquering Nipponese baby?

The sweet-tempered but stubborn Hawaiians, the Porto-Ricans, Filipinos and Chinese are well represented. It is the curly, fair-haired children who stand out like royalty to me, but there is no thought of discrimination either among the children or among their supervisors.

In this kindergarten there are 117 children enrolled, with six teachers in attendance. There is no charge for their care, which lasts from 8:30 to 11, other than a fee of 40 cents a week, which is used for their midmorning lunch. This sum even includes extra care for the undernourished.

The fact that these little ones, from any sort of home and every sort of race, have a medical examination once a year with follow-up work two times a week by a public health nurse is to me a marvelous accomplishment. A dentist comes to the school. There are health conferences for the mothers once a week, and every effort is made to advise and help with the children's home conditions.

I was told that this year, owing to the depression, there were many more underweight children. Special hours were given to their rest; cereal was added to their lunch of graham crackers and milk; a dozen bottles of cod liver oil had been donated but all to no avail.

When there is no "hana-hana," or work, these native homes do not have regular meals or sleeping hours.

Whenever any work is available, it is done, no matter how late the children go to bed. It was explained to me that example and reward, however, do help. If one Japanese mother is converted to the idea of having Sato's bad tonsils removed, the rest of the mothers will be only too glad to learn this health idea for their children.

One standard is used for all the children's heights and weights. I was interested and surprised at this, after having been among the sturdy but small Japanese and the huge, rangy Northern Chinese. Here, however, there does not seem to be such a physical difference. The various languages are also easily surmounted at this age. Each child has a smattering of the others' tongues, but to the dismay of future professors the whole is reduced to a jargon English.

What a future lies in store for these cosmopolitan children! Wherever they may travel, wherever they live, they will have a feeling of brotherhood. They have a mental as well as a physical advantage over other children who have never mingled with, or deigned to contact from childhood upward, the rest of the races of the world.

Possibly this sane, matter-of-fact, international education may even be the first step to a truly world-wide understanding, for these children of Honolulu, thinking along similar channels, will at least understand their neighboring nations' motives. For here, in Honolulu's preschool kindergartens and children's aid associations, the distinction is not too finely drawn between the races, while every advantage is afforded and every opportunity is given for the unhampered and complete development of their little minds and bodies.

A visit to such a gaily decorated dental office evidently holds a certain fascination for these little school children in Hawaii.

POSTURE

BY R. TAIT McKENZIE

Diagram showing the relation of the head, thorax and pelvis in the incorrect standing position.

Diagram showing the relation of the head, thorax and pelvis in the correct standing position.

GOOD posture is the cure of some evils and certainly a preventive of many. In infancy its preventive value has the greatest influence on the ensuing life of the baby, though much can be done by persistent exercise to overcome faults of posture in later life.

The home and school can cooperate effectively in training children to observe the rules of correct posture. In the school, however, most can be done in providing desks and seats of correct height and size, as well as the instruments for gymnastic exercises.

The need for proper seating cannot be too greatly emphasized, because of its direct effect on the spine. Desks should be designed to fit the abnormally large or small as well as the normally sized child. The pupil should not use a seat so low that his shoulders perforce become rounded, his head droops and his chest is flattened. The elbows should be able to rest on the desk without stooping or unduly elevating the shoulders, and the edge of the desk should overlap the edge of the seat. Many schools have a certain number of specially adjustable desks and seats for the express use of children who are above or below the average size.

Perfectly fitting seats are not everything. No child can sit still long. It is not in his nature to do so. He will become weary unless sufficient opportunity is allowed for exercising and changing posture during school hours. If he sits too long, the upper part of the body leans forward on or against the desk, constricting the chest, crowding the abdominal organs and impeding the circulation in the veins. The weight is supported by the arms, and the head, neck and spine hang by the muscles of the shoulder blades in abnormal curves. To relieve this overstrain of the back and shoulder muscles, the pupil slumps back until his weight rests on the shoulder blades and lower end of the spine, leaving the center of the back unsupported. The back sags down in a single long curve, the chest contracts, the breathing is made shallow, and the circulation slows up. This position stretches the muscles and ligaments of the spine, rounds the back and shoulders and shoves forward the chin.

The correct sitting posture is one in which the pupil sits erect, the pelvis resting equally on the seat, with the arms beside the hips and the head poised so as to bring the center of gravity within a line joining the seat bones. This posture makes a minimum demand on muscular energy and is most conducive to correct carriage. But the demands of school life do not permit the pupil to keep it long. Reading, writing and drawing are exercises that require deviations from the ideal. If to these requirements are added ill fitting desks and long periods of sitting, in which bad posture becomes habitual, the mischievous result cannot long be in doubt. The work of the school day should be arranged with these things in mind. The first year of the child's school life should not have more than one third of the time in confinement at the desk.

Short periods of sitting, followed by double that time spent in muscular activity out of the seat, should be the rule. This activity may in most cases consist of movements correlated with intellectual exercise. In the kindergarten, exercise is admirably combined with mental culture by the teaching of imitative games in which the large muscle groups are exercised in hopping, jumping and running and in imitating with the arms the flight of birds and insects. The circulation is stimulated and postural faults are prevented, while at the same time the child is taught valuable lessons in natural history in which his interest never flags.

The school day of children in the higher grades should have two five minute periods of corrective exercise at least, in addition to games during recess. These exercises should be designed to promote quick, strong, muscular control; to expand and enlarge the chest by deep breathing; to bring the blood from the abdomen out into the extremities, to correct spinal fatigue, and to teach the proper carriage of the body.

It is not possible for a child to remain long at rest with the weight equally on the two feet, because the tension on the two legs being the same, the muscles rapidly tire. The pupil instinctively rests his weight on the right foot, placing his left leg with bent knee out to the side as a prop. This resting position lowers the right shoulder, curves the spine and may start the first stage of a permanent scoliosis. The best resting pose to teach is that recommended by Dr. Eliza Mosher, in which the inactive foot is

placed in front instead of at the side. In this position the feet can be changed as the weight-bearing leg tires.

In order to decide on what may be the best rules and exercises for correct posture, bad posture must first be described. There is a test now widely used by which even the untrained teacher may form an accurate estimate of a child's posture. The first part of the test is designed to find the pupil's ability to take the erect attitude. The long axis of the trunk should continue the long axis of the head and neck. To assist the eye of the observer, a vertical line may be dropped from the front of the ear to the forward part of the foot. In poor posture the axes of the head, neck and trunk will form a zigzag instead of a straight line.

Another simple way to estimate the extent of the deformity is to stand the child beside an upright pole or rod. The variations from correct posture are three: the so-called fatigue, or gorilla type, in which the head is thrust forward, the chest sunken, and the abdomen protruded; round back posture, in which the hollow at the small of the back is obliterated, a posture cultivated by faults of poor seating; and the bantam, or pouter pigeon type, in which the chest is pushed forward and upward, and the lower part of the spine is overextended, forming a severe exaggeration of the natural lumbar curve. This posture is always the result of faulty teaching and is an exaggeration of the correct standing posture, caused by the mistaken efforts on the part of the teacher to overcorrect the first two faults.

Exercise 3: Standing position; arms downward and backward; fingers interlocked; palms outward; extend neck; roll shoulders backward and forearm into supination, palms being first in, then down and then out; reverse to starting position; relax.

Exercise 2: Arms forward raise; upward stretch; rise on tiptoes; inhale; sideward lower; slowly press arms back and exhale.

A child who can assume a good posture may not be able to sustain it. Some kind of endurance test is, therefore, an aid whereby faults of posture may be discovered and eliminated by having the children march. As the march proceeds, old muscle habits reassert themselves and many pupils who could hold the correct posture for a few minutes fall back into habitual faults. Heads will drop forward, shoulders droop and chests sink, as the children march. As these faults appear, the child is taken out of the marching line. Those who pass the standing and marching tests are then put through the third test, designed to show the action and endurance of the muscles of the spine and shoulders which are usually the first to yield to fatigue. When the arms are raised upward, these postural muscles, if weak, allow the chin to come forward and the chest to sink backward, so that a few minutes spent in raising the arms forward and upward fully extended and lowering them sideward and downward to the position at the start will bring this weakness to the surface.

Physical training is not only a matter of health. It is necessary for the education of the fundamental nerve centers of the body and for the building of character. During the whole of childhood these centers are developing, and their growth is not completed until adult life.

Exercise 4: Standing position; arms at sides; arms sideward raise; upward stretch; inhale; forward bend; rise; arms sideward lower; exhale.

For this reason not less than one hour in five should be devoted to training the motor area of the brain, in addition to the time allowed for free play. This should take the form of both gymnastics and athletics. Gymnastics, in addition to their corrective or medical character, have a value in discipline and also in the accurate application of exercise for a given purpose; they are less diffuse than athletics, more concentrated, and for this reason they cannot be applied closely or for long to the young, except in the guise of play. For girls, the exercises most popular are the peasant dances of Ireland, Scotland, Spain and Sweden, in which good posture is an integral part of the dance, and agility and grace are developed.

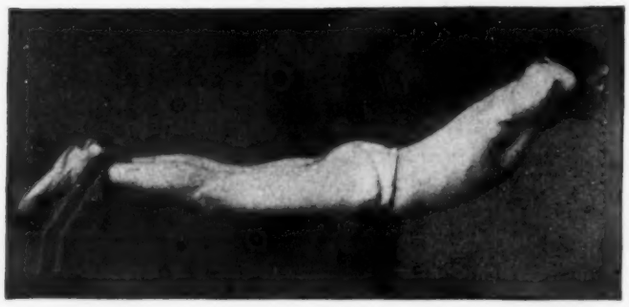
The necessity for good posture at college age is a logical sequence to the valuable habits learned in childhood. The college student's remediable defects must be corrected and his physical powers trained to the highest point of efficiency. He must be taught the graceful carriage characteristic of the well bred man. His powers of self preservation and efficiency must be increased. If he has not learned it already, he must be given the opportunity for physical recreation by a knowledge of sports and games, for athletic activity should be the safety valve of a sedentary life and should also teach, in addition to those social and moral qualities which can be cultivated so well in no other way, the lesson of gracefully carrying the body. That is why a university course in physical education should begin with a careful examination to find the exact bodily condition of the student; this gives an intelligent foundation on which to base advice and instruction. Furthermore, the examination of the student must not be considered complete without a test of his ability to accomplish certain muscular feats that cover the main activities of the body in exercises of maximum effort and of endurance.

Physical education for women too often follows slavishly the scheme planned for men, not because it is best for women but because it is the same. This is a deplorable mistake because bodily training of the two sexes must differ radically in order to fit each for its own future life and environment. It cannot, with impunity, ignore the psychologic and physiologic differences between the boy and the girl, and between man and woman.

In these days of professional freedom for women, with its consequent demand on their efficiency and endurance, there is much reason for women to practice good posture. Many women suffer from the effect of faulty attitude, with its direct relation to pain, as in backache and headache.

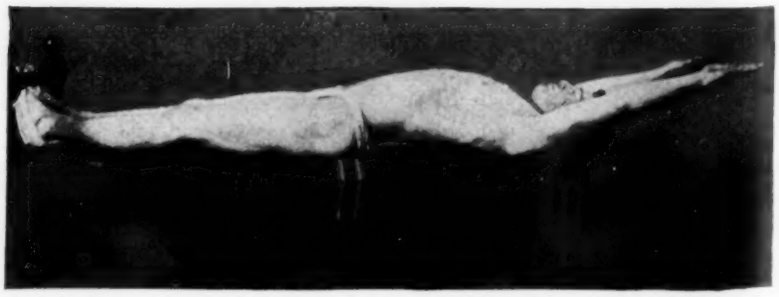
The first twelve years of a girl's life need differ little from that of a boy's in physical activity. She may lead the same outdoor life, climbing, swimming, running and playing ball. Nothing else will prepare her so well for the great physical and mental change which takes place with the attainment of puberty. Outdoor games and exercises will establish nervous stability and poise and give the best possible foundation for building future womanhood.

Women cannot endure prolonged physical or mental strain as well as men, but with frequent

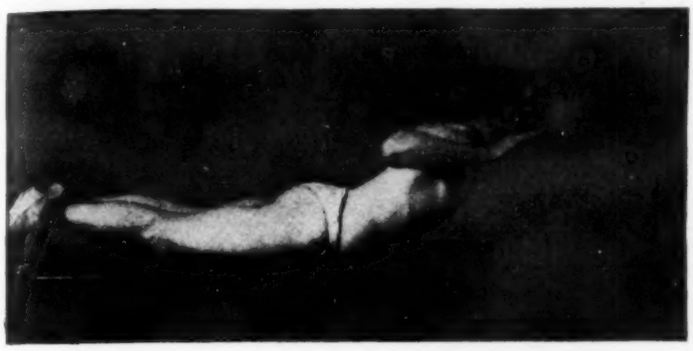


Exercise 5: Lie prone on couch with feet strapped; clasp hands behind head; raise head and extend spine, pressing elbows backward.

The photograph to the right illustrates a deep breathing exercise, which should be taken to relieve the severity of exercise 5.



rests they can in the end accomplish almost as much. Certain games, such as football, boxing, pole vaulting and heavy gymnastics, are obviously unsuited to them, but in dancing, swimming, calisthenics, archery, skating and fencing they come much nearer to competing with men on equal terms. While they are less adapted to arduous muscular work, their vital endurance is better; therefore the disadvantage they have



in other activities is made up for by this greater tenacity to life. With a few exceptions, girls accustomed to athletics and gymnastics can continue exercise without detriment during menstruation, though they should refrain at that time from too exhausting contests or competitions.

Exercise 6: Position similar to that in exercise 5; arms at sides; raise head, bringing arms forward; imitate breast stroke in swimming.

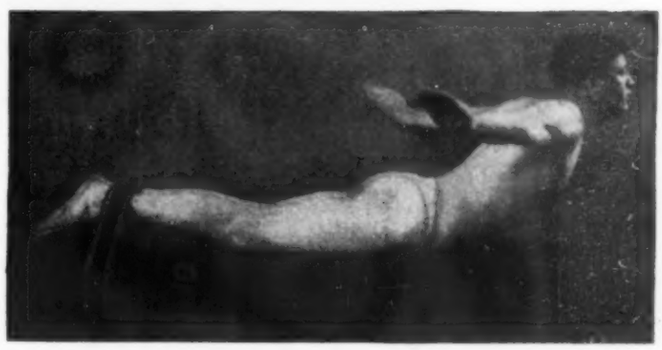
Swimming is one of the best exercises for women because it calls into action most of the muscles of the body but spares those of the back so generally overworked in standing and sitting postures.

Finally, it is quite as important to take occasional hours of absolute rest in the recumbent position as it is to exercise, especially when the nervous and muscular system is overwrought.

The importance of proper clothing for men, women and children has a high place in the promotion of good posture which cannot be overemphasized, although in these days of greater freedom and simplicity in dress, there is not so much need to belabor the point as there was a few generations ago. Any tendency to return to the constricting, overweighted and too numerous garments of a few decades past should be greatly deplored.

Proper shoes have a definite effect on posture in both children and adults. It has been found that the ground plan of the human foot varies so that it may be straight, inflared or outflared; hence no one type of shoe will be suited to all types of feet. Deformities of the feet, either from the constriction of the footwear or from the breaking down of the longitudinal and lateral arches of the feet, have a vital influence on posture. The balance of the foot, either flat or on a high heel, also affects the posture, although this is not so serious as was formerly supposed, if the shoe is so made that the weight rests on the heel instead of slipping forward and crowding the toes into the forward part of the shoe.

The advantage of the upright position is somewhat offset by the frequency of deformities caused by a yielding of the structures concerned with support. The body may yield at the spine, at the knee joints or at the arch of the foot, which becomes broken down and flattened, causing the deformity known as flatfoot. A typical case of flatfoot shows a turning out of the line of the heel, a convexity of the inner contour of the foot, and a concavity of its outer margin. A tracing of the foot would not show any instep. The great majority of such cases are what might be termed static and are found in nurses, clerks, waiters, barbers, motormen



and all others whose long hours of continued standing keep the muscles and ligaments of the foot constantly strained. The pernicious habit of standing with the toes turned out always makes the condition worse. It is also found in stout persons, whose weight is too much for their ligaments. Bernard Roth, in his series of 1,000 cases of twisted spine, found flatfoot in 76 per cent of them. In an examination of 1,000 supposedly normal students I have found it in 217 cases. Lovett has found many cases among hospital nurses, who are peculiarly susceptible to it. The symptoms are varied. A considerable degree of flatfoot may be present without causing much irritation; again, great pain may be caused by a comparatively slight degree of this deformity. In any *(Continued on page 1044)*

Old Maids' Children

By LOUISE PRICE BELL

I SHOULD have known better than to go downstairs and leave the twins alone! This was the third time I had taken the chance and each time with perilous results. The first time, I returned to find my offspring playing pirate in the bathtub, perfectly unconscious of their clean rompers, which were drenched when I rescued them. The second time, I found Nancy in the clothes hamper, after she had thrown the contents out of the second-story window and incidentally narrowly escaped throwing herself out as well. (Daddy put the screens on the windows that night, you may be sure!) While she was engrossed in this, Suzanne was contentedly playing "shoe man." She had removed all the shoes from our clothes closet, and there they lay in a pile, my new silver evening slippers at the bottom, of course. And Suzanne was ambitiously cleaning one of her daddy's golf shoes with our best clothes-brush.

This time everything was so quiet when I started up the stairs that, skeptical at once, I hastened my steps. I had long since discovered that perfect quiet when the twins were awake was the most pregnant sort of silence. So I opened the nursery door softly. No twins in sight! I tiptoed to the bathroom, and there I found them just in time. Nancy, always the more originative and aggressive of the two children, had taken her daddy's razor from the shaving cabinet. Suzanne, a willing victim, was perched on the bath stool with a towel about her shoulders, all ready to be "shavededed."

Fortunately I arrived during the lathering, which was being performed with Suzanne's toothbrush, a bar of soap and no little force! Adjustments made and the twins safely in the nursery, I opened the mail for which I had come downstairs. There were two or three bills, a magazine, and a letter postmarked Chicago. Eagerly I tore it open and read:

Madeleine dear:

You will no doubt be flabbergasted at the news, but here goes, anyway. I am coming to spend that long-promised week with you at last; that is, if it is convenient. Honestly, Madeleine, I have tried to come before, but just haven't been able to make it. I was thinking just this morning, though, that I was really glad, for the twins must be at the most interesting age right now—the little cherubs! I can scarcely wait to see them. If it is O.K. with you, I will arrive some time Friday morning, in time for lunch anyway. Don't bother to meet me as I am not sure what train I will get. Until Friday, unless I hear to the contrary—

Yours,
Norma.

Little cherubs!

I was delighted with the news of Norma's visit, for she was one of my dearest friends and I had looked for her for ages. But I held my breath when I thought of what she might think of my mischievous babies. For Norma was an educator and had worked for years in kindergartens and nursery schools with youngsters of all types, studying them from a trained psychologist's point of view and with a trained mind. Summer after summer she had spent studying, both in this country and on the Continent, and I felt that she knew about all there was to know about children! I tried so hard to teach the twins correctly, but it seemed as though they always reacted exactly opposite to the way all the books on child care seemed to expect any child to react! It was discouraging. They were so sweet and lovable, but what would Norma . . . Crash! So deeply absorbed had I been with my thoughts that I had not sensed that the twins had left the nursery; but since the tumult came from the direction of the bathroom, I hastened to that point. There I found my precious twins, bathroom shelf on top of them and everything from boric acid to mercurochrome running in little rivulets over their clothing and across the floor. Nancy had received one small cut; fortunately there were no other casualties.

"What were you trying to do?" I questioned in dismay, picking up my disheveled daughters and viewing the débris.

Nancy looked up at me from beneath a red smudged eye. "Cleaning bathroom," she boasted proudly.

Little cherubs, indeed!

Friday came, and with it Norma. Just the same old Norma as ever, seemingly not a day older despite her daily contacts with the problems of thirty active youngsters.

"Do you like your work as well as ever?" I asked as we lingered over our teacups after my husband had left for the office.

"I love it!" she replied enthusiastically, her face echoing her words. "There is always something new and interesting coming up."

"I imagine so," I agreed, and immediately I thought of the twins. The last I knew they were looking at picture books on the living-room floor, so I jumped up and ran into the living-room.

"What are you doing?" I queried as I saw them standing by the davenport with no picture

books or toys near. It looked suspicious, for their facial expressions showed they were interested in something.

"Making pincushions," piped Nancy.

"Nice pincushions," agreed Suzanne.

"Pincushions! What do you mean?" And then I understood. They had taken several papers of needles from my sewing cabinet, and while Norma and I were peacefully chatting, they had literally filled the davenport cushions with them!

"Naughty, naughty girls," I wailed, slapping their hands. "You will have to go straight to bed." And away I whisked them, crying and miserable.

I don't know how long it took us to remove the needles from the davenport, but it was no short job. And since we had no idea of the actual number of needles therein, though I knew there were dozens, we held our breaths for months whenever any one started to sit on our davenport, and only breathed easily when we saw him safely settled!

The morning after her arrival, Norma went downtown to do some necessary shopping, and I decided to invite a few friends in for tea in the afternoon. So, immediately after she left, I established the twins in the sunroom beside a huge box of blocks, while I did the necessary telephoning to the grocer and my friends. As the twins had just finished substantial breakfasts of orange juice, huge porringers of oatmeal and cream, and quantities of zweiback, I was confident that they would be contented for a while, and during that period of contentment I would make all possible haste. But how little a mother knows of the plans in her active child's curly head!

During my last telephone conversation, I suddenly sensed that dangerous quiet which I had learned to interpret as a danger signal, so I hurriedly drew my conversation to a close and hastened to the sunroom. The pile of blocks was there, but no twins! Fearing to call and perhaps startle them into something more dangerous than the undertaking in which they might then be involved, I started to search for them. My tour of inspection brought me to the kitchen, where I came to a sudden and terrified halt. The kitchen had been cool, early in the morning, and I had lighted the broiler and left the door open to take the chill off the room. Now, in front of the stove stood Nancy, methodically lighting bits of newspaper from the broiler blaze, handing them to Suzanne and directing her to stamp them out on the floor, which she was obediently doing! How they ever escaped being dreadfully burned or having their dresses catch on fire is more than I have ever been able to understand; but the fates were with them, for they did not have "one burn between them." Our kitchen linoleum, which had been purchased after much juggling and pinching of our budget and had been cemented in place but a few months earlier, suffered, however, and still bears the marks of the prank in the form of two large charred spots where the extinguishing process was performed.

I scolded them. I slapped their hands. Then, taking one twin under each arm, I carried them to the nursery and deposited them in the center of the floor. Frantically I looked about for something to keep them busy. Then I thought of a reserve pile of toys which we had put away at Christmas when the gifts were so numerous that we felt they could not be enjoyed without confusion. A happy thought! So, with these new toys to intrigue them, I left, telling them to be "good children as mother is busy"—a futile request.

I rushed about, making every minute count. Dishes were still unwashed; no food was prepared for lunch or dinner, and there were the cakes to make for tea. I gazed dolefully at a pile of soiled rompers and dresses, then dropped them down the laundry chute, for there was no time to wash them that morning! Everything went along fine. I peeped in at the twins once and to my delight found them still happily engrossed in their toys. So in no time at all, I had everything done. The little cakes looked delicious as I arranged them in a straight row at the back of the kitchen table. Everything was ready but fresh flowers. I had forgotten all about them!

Armed with garden shears, I flew out the back door, down the garden path to our "handkerchief garden" and soon had my basket full to overflowing. Hurrying back to the house, I planned just what vases I would use for the various blooms; and thinking of that, I came on a totally unexpected scene as I entered the kitchen. Poised on the kitchen stool was Nancy; beside her on tiptoe stood her sister, and from

Razor in hand, Nancy was about to shave her twin.

every one but three of my delicious-looking cakes there was a crescent-shaped piece missing, suspiciously like a bite.

I felt like crying, but I scolded instead. "You naughty, naughty babies," I repeated over and over, slapping their hands. "You have spoiled mother's party cakes!"

"Sister and I trying cakes. We want to tell Mommy if cakes are good," ventured Nancy between tears.

But I had no ear for explanations. "Naughty girls," I scolded. "You will both have to go straight to bed!"

Just then Norma returned.

"Look at these cakes, Norma," I cried out in exasperation. "Did you ever see such naughty children in your life?"

Norma laid down her packages and pulled off her hat.

"What can I do to help, dear?" Norma asked calmly.

"Undress those little nuisances and put them to bed. It will be the biggest help I know," I sighed. "I'll have to get busy and make some more cakes," I added as I plunged the flowers into a pail of water until I could get time to arrange them.

"Do they have naps as early as this—before lunch?" asked Norma.

"No, but they are going to bed for punishment. If they are in bed, they will be out of mischief," I replied sharply. "You'll find their pajamas in the top dresser drawer in the nursery."

With Norma's help, I finished things. She gave the twins their lunch, and they seemed happy, not at all as though they were being punished; but I was so relieved to have her take the responsibility that I did not care about that. Doris would come, dress them and take them out after their naps, so I would not have to think about them for a few hours at least. . . . And so the day went off successfully.

Norma stayed a week, and I certainly enjoyed her visit, for I am extremely fond of her. But when she told me she was leaving the next day, I was ashamed to realize that I felt relieved. On the realization of this feeling, I immediately did some intensive introspection to ascertain the reason. It was because I was ashamed of the way I managed my twins! I was superconscious of Norma's experience and training; I felt that she looked at my management with a critical eye and heartily disapproved. And yet I was too proud to admit these facts to her and ask her advice. Had I been a more experienced mother, I would not have hesitated; but like many other new mothers, I felt that I knew what to do, since I kept in touch with the best authorities on behaviorism, child training, and the like. And yet I also knew that I was making a great many mistakes and did not know how to rectify them. Pride is a queer characteristic when it carries one to such lengths as this. Here was a splendid opportunity for me to have the most excellent advice from some one of whom I was fond; yet because of false pride, I was attempting to "pull the wool" over my own eyes, although I knew I wasn't pulling it over Norma's.

But it worked out all right, after all.

The night before Norma's departure my husband had to go out for an hour or so after dinner, so the little game of contract which we had planned was canceled. After tucking my energetic twins in bed, I took my mending basket into the living-room where Norma sat before the fire, as the evening was cool.

"Madeleine," she suggested as I entered, "do you suppose you could get away for a few days this fall and come and visit me?"

"Heavens, no!" I thundered. "Haven't you been here long enough to realize that these 'little cherubs' of mine need me every minute?"

Norma laughed. "But it would do you loads of good, Madeleine, and Doris is really sweet and patient with the children. In fact," she added gingerly, "I think she is more patient with them than their nice little mother."

All my life I have heard of the proverbial last straw, but this was the first time I had ever really understood the real meaning. Before I knew it, the tears were rolling down my cheeks, and the more I tried to control the flood, the less I seemed to be able to do so.

"My dear! I didn't mean to hurt you." Norma was most solicitous.

"Don't worry about that, Norma. I know you disapprove of the way I manage the twins; I have felt that way ever since you came, so it isn't any news to me," I sniffled.

"You aren't angry, are you, dear?" appealed Norma.

I sat up straight in my chair. "No, I am not angry; and I am glad you said what you did. I am ashamed to say that I have been too proud to ask you for suggestions, and now I am going to. Go ahead, start in and tell me everything you disapprove of; it will do me good," I declared bravely, determined to overcome my foolish pride for the sake of my twins.

"Do you really mean it?" queried Norma. "You know what people say about 'old maids' children'; that is why I am always hesitant to offer suggestions unless I am asked. I should hate to have any one, even you, think that I was trying to impose my opinions on her."

"I won't. Go ahead," I pleaded.

Norma reached for a piece of fudge and settled down in the depths of her chair. "All right, here goes. To begin with, Madeleine, you are too impatient. Patience is the paramount virtue in dealing with children; and the more patience one can muster up, the easier will her task become and the better will be the results obtained. The child will be much better off too. It is not fair to a child to irritate his nervous system by impatient outbursts."

"I do try to be patient, Norma, really I do," I explained. "But how can any human being remain unruffled through some of the pranks that these twins perform? You have seen some of their stunts; so tell me the cure-all."

"A lot of the things that happen, a lot of the mischief the twins get into could be eliminated, Madeleine."

"Eliminated? How?" I asked in astonishment.

"A sand pile would help a lot. Why haven't you one for them, Madeleine? You know a sand pile is almost a panacea for mischievous ideas, and there isn't a child who does not love to play in the sand. You have plenty of room for one; close to the garden, near the apple tree there is plenty of sunshine, yet on hot days they could play under the tree. You could get a load of sand for a nominal sum, and Don could fence a big square off with chicken wire. Then you could plant sweet peas around the fence, and the whole thing would blend in with you garden."

"It isn't because of the appearance that we haven't had a sand pile. I thought the twins were too young for one."

"No child is too young for a sand pile, child," retorted Norma. "With a big sand pile, you could put the twins out there in their sun suits knowing that they would be perfectly safe, out of mischief, and getting the maximum of fresh air and sunshine. I am sure you would find that a sand pile alone would eliminate a heap of trouble for you, Madeleine."

"I believe you are right," I mused, mentally planning the thing out. "What next?"

"You slap their hands too much. Whenever they do anything naughty, you scold and slap their hands instead of having their punishment bear some relation to their 'crime.' And didn't you ever think that they do everything they do because they are full of activity and that if you substitute something similar, but not destructive, you would solve that particular problem against the next offense?"

"I don't believe I understand just what you mean," I said, puzzled.

"Well, here's an example. You have been having a dreadful time with Suzanne about writing on the wall. Nancy doesn't do it, except occasionally in imitation of Suzanne. That shows that probably Suzanne has more artistic tendencies, that is, more inclination toward drawing and writing than Nancy. Now if you furnish Suzanne with something more inviting than the wall on which to do her scribbling, you will solve the problem. The poor child has no place to 'loosen' these drawing desires. Get a blackboard for her and also some big pieces of paper—wrapping paper will do—and big, strong, colored crayons. I think you will find that she will be so entranced with the new material that your walls will not suffer any more. Make her understand that the materials are

A totally unexpected sight met my eyes.

hers; praise her efforts, no matter how poor they are, and help her to draw simple things when she gets older."

"A good suggestion," I agreed. "But what if she continues to mark up the wall?"

"She probably will mark it up once or twice. You must expect that; but be patient and calm about it. Instead of slapping her hands and scolding, simply lead her to the blackboard or her paper and explain to her that 'This is where we draw and write. The wall paper is to make our home pretty.' Start in to draw something with her, get her thoroughly interested, and keep the blackboard more interesting than the wall. You may have to do this more than once; but I doubt it, if you use your psychology correctly."

I admitted that I saw a solution to that problem. It sounded reasonable to me.

"But what would you give as a reason for that beautiful bonfire on my kitchen floor the other morning?" I asked. "What did I do wrong then? Nancy has tried to play with fire before, and I have felt that she must understand that it is dangerous."

"Nancy is evidently fascinated by fire. Loads of children are; it is a sort of savage instinct. But your attempts to steer her away from fire only make her more interested, for children are no different than we are in that respect. We

always want to find out about the very things we are not supposed to know; you know that."

"Yes, but I must break her of the habit. It worries both Don and me dreadfully."

"It would be a splendid thing if Don could take the twins with him some day when there is a fire. Let them see it and realize how it is really destroying a home or store. Talk about it afterward, so that the scene will be plainly stamped on their minds. For the present, have you ever thought of having the children help you burn the papers every morning? Let them light matches, touch the papers and watch them burn. Instil in them the feeling that they are safe because you, an older person, are there. Talk to them about being careful; and if they happen to have anything that needs to be destroyed, such as a badly torn picture book, let them watch its destruction so that they realize the utter destruction of fire. With you near them, let them actually feel the intense heat from the bonfire. Mothers have told me that that alone cures some children. I am sure that if you let them help you burn papers for a while, they will soon tire of fires in general, and their insatiable curiosity will be satisfied."

"I wish I had known all this before my pretty linoleum was burned," I sighed. "That was a narrow escape for the twins; but they don't realize that, of course. Well, what next?"

"Remember the day I came when the twins put needles in the davenport? I was going to suggest the next day that you give them some old cereal boxes and blunt pins and let them make pincushions to their hearts' content. I didn't, though, for I didn't want to interfere. You see the point, don't you? Give them something to do that is harmless and yet takes care of the particular desire or inclination at the time. And, Madeleine, never send or put them to bed for punishment!"

"Why not? When they are in bed, they are out of mischief. They don't like to have me do that; that is why I have thought it was about the best punishment of any."

"Haven't you been telling me how discouraged you were because the twins fussed about going to bed for their naps and at night? And can't you see the connection? They associate unpleasantness with bed instead of associating only happy thoughts with it. No matter what happens, Madeleine, I should never put a child to bed for punishment. If a child never has anything but pleasant associations with his bedtime, he will never mind going to bed. I know this is true for we experimented with seven babies for this very reaction. In fact, we held out their bedtime to them as a reward, saying often, 'If we can't be polite, perhaps we won't be able to go to bed at bedtime; perhaps we will have to play politeness instead.' Playing politeness was the way we taught them to say 'please,' 'thank you' and 'pardon me,' by handing the children objects and expecting an immediate 'thank you,' and so on. It is a good idea to keep some happy incident or story until bedtime or naptime to relate it to children; that gives them a feeling of anticipation. I don't mean to make a point of always doing that, so that it acts as a bribe, but generally to plan that bedtime will in every way be a time to which they will look forward."

"I never thought of that, Norma. You are beginning to make me feel I know surprisingly little," I admitted. "But one thing for which I'll bet you will have no solution, Miss Wise-Lady, is those awful bites from my party cakes."

"Oh, but I have a solution, the simplest one in the world," she replied, smiling. "It requires that important characteristic, patience, of course; but most problems do. Simply let the twins help you when you bake. If they had had the least little part to do in the preparing of the cakes, nothing in the world would have induced them to take those bites."

"But I can't have two babies underfoot when I am trying to bake; that is ridiculous, Norma. Why, how can you suggest such a thing? That is the first suggestion that has sounded purely theoretical."

"Oh, but it isn't. It is practical. As a matter of fact, it isn't my own idea at all, Madeleine. This friend in Chicago of whom I have spoken since I have been here, the one with the four daughters, is the person who should have the credit for that. Her two oldest girls are now 10 and 12 and can get dinner alone, make cake, cookies, desserts and even home-made bread, and all because she let them help her in the kitchen from the time they were babies!"

"But what in the world could my twins do, pray tell?"

"Not anything much at first, except to get out your mixing-bowl and spoon, and to grease your cake tins. But they can be made to feel as though they are helping by your attitude and appreciation of the little they can actually do. They can have a tiny piece of dough or cake mixture to stir and pour into the greased top of a baking-powder can to bake for daddy. Then when it is done, they can even now mix a little confectioners' sugar and melted butter for icing and spread it on their little cakes themselves. Then, before you know it, they will be able to beat eggs for you, sift the flour and do any number of things. Couldn't they wash the baking dishes, even now? Youngsters love to splash about in water; with rubber aprons on, they will be perfectly dry, even if they do spill a little. You will be surprised to see how contented they will be. And back of all this is the idea that they are learning to be useful, which is a most important lesson in life. Why, Margaret's daughters would rather bake than do anything else, and the oldest girl earned all the money for her Girl Scout equipment by selling the things she baked." *(Continued on page 1046)*

Sex Education

V.

The School Child

Wright

By

THURMAN B. RICE

THE school child is no longer under the eye of his parents. He will hear and learn of sex. The pertinent question is not "Will he learn?" but, rather, "Where and of whom will he learn?" It is a foolish parent who thinks that a boy or girl in school will remain ignorant of these matters, and it is, indeed, a trusting parent who is willing to turn the instruction of his son or daughter in these matters over to ignorant and sometimes crude companions. The child of this age is starting to school and is beginning to feel that he knows something of life. Quite naturally he wants to understand things as they are. Fortunately he has not yet reached the age of puberty with its many perplexing problems and disturbing urges which will furnish an additional motive for sex interest.

Answer Questions but Do Not Raise Them

Except that it will be necessary to give these children more information than was given the preschool child, the problems are not greatly different from those discussed in the chapter on "The Teaching of Sex to the Young Child," for the sexual system of the school child is still relatively undeveloped and the child has only a passing interest in such matters, whereas in the adolescent period, sex becomes a subject in the center of consciousness and interest. The teaching is still indirect and should consist of principles rather than of details. It is a matter of ideals and of idealism. Questions should be answered fully and frankly so far as the child is able to understand or is interested, but questions are not to be raised in the child's mind.

"Let Nature Be Your Teacher"

This is the time when children are tremendously interested in nature, and it is easy, indeed, for them to have observed most of the essential phenomena of sex before they have become involved in the complex social phenomena peculiar to modern life which so muddle the issue. The parent who understands the fundamentals of sex and life as they are manifested in plants and animals will have an enormous advantage in the teaching of his children. I was recently sitting with my 8 year old boy on the bank of a stream, waiting for something

to happen, as it always will if one sits still enough. A pair of weasels and their ten nearly grown young came trouping along the bank evidently in a great hurry to get somewhere. In the lead was an adult, probably the mother, carrying by the nape of the neck one of the young, which was evidently dead or seriously injured. In the rear was the other adult, probably the father, nudging the youngsters along at a great rate. It was a striking picture and a marvelous opportunity to point out, without making a moral of it, the meaning of a family.

There is good reason to believe that the boy will remember the episode as long as he lives and that he resolved to bring up the rear when his flock were in danger, standing between them and danger and observing the fine old tradition, "women and children first." He has seen the nests of a fish and a bird. He has seen a moving picture in the home which showed the mating of birds. He has seen the young peas in the mother pod. He has seen the sprouting of other peas, thereby continuing the never ending cycle of life. With no conception whatever of the ugliness of the abuses of life and sex, he has had his mind filled with the fine and the beautiful phases of the subject.

An important matter during this period is the teaching of a fine sense of modesty without at the same time teaching shame. Parents all too often shame their children into a state of mind that is mistaken for modesty. Shame except for some improper act is an emotion that should never be utilized in teaching. There is nothing about the reproductive organs for which a child needs to be ashamed. He learns to cover himself because it is the custom to do so and because the older persons whom he wishes to emulate do so. There is nothing wrong about the genitals, but rather they are so important that they must be protected. They are so intimately one's real self that one must not go about exposing in a cheap and common way that which is so essentially private. Nice manners prescribe that care must be taken in these matters, and the child soon learns to take this view of the matter.

"Puppy Love" Is Part of Childhood

Nearly all normal children have their little love affairs during the first years in school, and pretty episodes they are, too. Since it is so obviously true that one of the most important tasks in later life is the selection of a worthy mate, it is well that even children should be gaining a little proficiency in so vital a matter. Just as the kitten playing with a ball is really learning to catch mice, so these children are practicing the greatest of all arts. It is a grave mistake for parents or others to tease children about their love affairs. Such teasing puts the idea into the head of the child that there is something inherently wrong about the whole matter and that he or she has done something that is improper. When, subsequently, a real affair is developing, it will be carefully concealed from the parents; and in this way the parent loses his opportunity to be of service in teaching the child how he may select the best companions. Furthermore, the curiosity of the child teaches him to seek the evil which he has been led to believe is in the apparently harmless relation which he has with another of the opposite sex. With such stimulation he will soon enough find the evil.

Interference Usually Defeats Its Own Purpose

Parents who tease their young children about their beaux and seek to deter them from making dangerous alliances should look about them and learn that the best way to insure against the possibility of having these play love affairs go too far is merely to let them run without resistance. Children are far too fickle as a rule to do more than toy with a passion which they are much too young really to understand. Soon it will be forgotten. On the other hand, the parent who attempts to break up such an affair is assuming a grave responsibility; usually he merely intensifies it. There is no more certain way to drive a young, or older, couple into each other's arms than for some stupid person to personify the well known bull in a china shop and "set his foot down on the whole business." The reason for this is easily seen. One naturally tends to protect one's friends when they are attacked, and one invariably learns to love those whom one protects. Not only are the children being set into mischief when they are teased, but the parents are accomplishing exactly the opposite result from that which they desire when they indulge in so low a form of correction or amusement.

The parent who allows his or her children to assume natural relations with other children of the same or opposite sex need rarely fear that mischief will be done. The child, being still undeveloped sexually, does not give any thought to the grosser manifestations of the subject unless they are suggested to him by his elders. When the relation is perfectly natural and the parent has abstained from teasing, the child will be free to talk about the matter; hence the parent may keep himself informed concerning the course of events. In case, then, that the child gets on dangerous ground, a frank discussion of the matter is possible and will not be resented if skilfully handled. The parent may be able to point out in a kindly manner the good and bad traits in the favored friends; in this way he may be of real service in the important matter of picking the permanent mate a few years later. The young people need all the aid they can get in so difficult a project. It is rather evident, too, that many of them have no knowledge whatever about how to go about it, if one

may judge by the results. This very day, on the other hand, I have heard of the marriage of two splendid young people who were lovers in kindergarten and are now both graduating from college. How can one evaluate the effect that these two have had on each other? Theirs is a marriage which will not go wrong, because it is thoroughly tested and tried.

Manhood and Womanhood in the Making

Boys and girls will frequently play "father and mother" games. Though it may seem far-fetched to some, they are actually gaining much experience which may be of great benefit to them in later life. It is not at all unusual to hear children of this age express themselves as to what they will do when they are men or women, as the case may be. For the most part they will do well if they later come up to those expressed ideals. It is also common to hear children say what they will do when they have children of their own, or what their children will or will not do. The wise parent at such a time may well take note. It is possible that he or she may learn something. Under no condition should the children be ridiculed or teased at such a time. Here are manhood and womanhood in the making, and it is mighty serious business.

As long as such games are strictly spontaneous, they are splendid. They may become most sordid, however, when the elders attempt to help. I remember with a sharp sensation of disgust a mock wedding between a boy of 10 and a girl of 8 that was staged at considerable expense and was very "smart." I have never seen two more sophisticated and utterly disgusting children. The boy in full dress clothes was a man of the world who "wise-cracked" about things concerning which he had no understanding whatever; the girl ogled him in a meaningful way, having evidently been instructed by some older person who undoubtedly was a good teacher. This sort of thing is so utterly unnatural as to be disgusting in the extreme. It could hardly fail to cause considerable damage to the character development of these children.

Much worry has been needlessly suffered by devoted parents who have failed to understand children of this age. Boys and girls are curious. They will naturally examine their bodies, or, if the opportunity presents itself, the body of another of the same or opposite sex. The misguided parent thinks that this is exactly the same as if an adult should do so and becomes all excited about it. Frankly, I should be inclined to question the mentality of a child who has not done so. The best way to draw the teeth of such a possible menace is to allow the child to satisfy that fine sense of curiosity which impels him to try to find out how things are made and, having found out, lets him go on to something else. Two little girls in a closet were caught discussing these matters, and the mother was needlessly alarmed. It was explained to them that such conduct is not considered to be good social form, and no more was said about it. They had satisfied their curiosity; the episode was ended. It is probable that they rather soon forgot about it. If they had been severely punished, however, they would have had good reason to remember and to wish to continue the experience when the opportunity presented itself to do so without being caught.

Only the Possessor of a Habit Can Break It

Frequently children will get into the habit of playing with or pulling at the genitals. Such children, both boys and girls, may be in need of a thorough examination by a competent physician. It is not unlikely that circumcision is needed. If there is no pathologic basis for the habit, the child should be taught that it is bad manners to do so and that an ugly habit may

Nature teaches the child many beautiful lessons.

H. Armstrong Roberts

be formed. With help rather than with scolding he may soon break himself of the tendency. Parents should remember that no one can break a habit except the person who has it and that the task is one that requires patience and perseverance beyond that which a child may be expected to have. Little boys and girls are occasionally found to have developed the practice of masturbation. Normal children of this age will rarely go to excess unless they are being stimulated by some older person. If a child of this age masturbates frequently, a careful watch should be made, not so much of the child as of his older associates. The reason for this is evident, as the child is hardly developed sufficiently for the habit to have arisen from within.

I recently heard of a little girl who had been adopted into a fine family after having been in an orphans' home. Some older girl there had taught her to masturbate by rubbing the genitals with her hands. The foster-mother was horrified and thought that the act presaged a career as a prostitute. She whipped the child, but the practice continued. Then she put her to bed with hands tied and did all sorts of things that a person who does not understand might do. The result was that the child, who should have forgotten about the whole business, could think of nothing else. The mother consulted a physician, who prescribed shorter hours of sleep and longer hours in the open air. The child was put to bed deliciously tired and was taken up in the morning as soon as she was awake. No mention was ever made of the distressing subject, and soon the child was entirely out of the habit. All that was needed was a sympathetic understanding of the physiology and psychology of an 8 year old girl.

Encourage Healthful Activities

Children of this age should be interested in many things, and when they are so, one need not worry that they will be too much concerned about an instinct which is far from mature. All sorts of healthful activities are to be encouraged. Exercise in the open air is far more conducive to good results than excessive poring over books. Regular habits in matters pertaining to health will lay the best possible foundation for a normal sex life in later years. The child should grow in "wisdom and stature" during this time. He should develop the body as it was intended to be developed. School interests, play, club work of all sorts, scout exercises, athletic teams and kindred activities permit little time for those forms of sex activity which might really be dangerous.

Of vast importance during this period and before is the development of self control. I cannot understand how a subsequent marriage is going to be successful if either partner is unable to control his or her temper or selfish inclinations. Parents are doing the consorts of their children a grave injustice when they permit children to grow up in such a way as to cause them always to consider their own welfare first. It may seem to some that this subject has nothing whatever to do with sex, but actually it has everything to do with it. The child who must have his own way, who must have everything that he wants, who has never been taught to give up, or who does not know how to work is going to make a mess of marriage.

Sex Education Should Begin at Home

The question as to how much direct sex instruction should be given during this period is a rather knotty one. I believe that sex during this period is probably less to the fore than at any time since babyhood, provided the curiosity of the preschool child has been properly satisfied in preschool years. If the child knows in a general way about these matters, he will let it go at that until the problems of adolescence begin to assert themselves. Matters pertaining to sex in its simpler forms should be frankly discussed by the family in the presence of the child. Questions are answered, and basic principles underlying proper conduct are deeply implanted; and that is about all that is necessary.

It is usually not advisable that direct instruction in these matters be given at school. In the first place, few teachers are especially competent to do so. Sex is not a subject for group instruction at regular recitation periods. Teachers should seek to be of aid to boys and girls who may be in trouble or worried about these matters, but they will usually need to work in an indirect way and even then may frequently arouse the antagonism of the parents.

The boy of this age is intensely idealistic. He has his heroes, men of action and high accomplishment. He dreams of hazardous stunts and impossible accomplishments. All too often he is attracted as a moth to the flame by the supposedly brave exploits of the gangster and the gunman. Frequently the reason for the fascination is that his own good parents and relatives are so unromantic as to bore him to death. Fathers need more to appreciate the intense desire that their sons have to be able to brag about their dads. The father should attend to his most important business, that of being a "real guy" in the eyes of his children. To a great number of teachers the mind of a real live boy is an unknown land which they have not the slightest wish to explore.

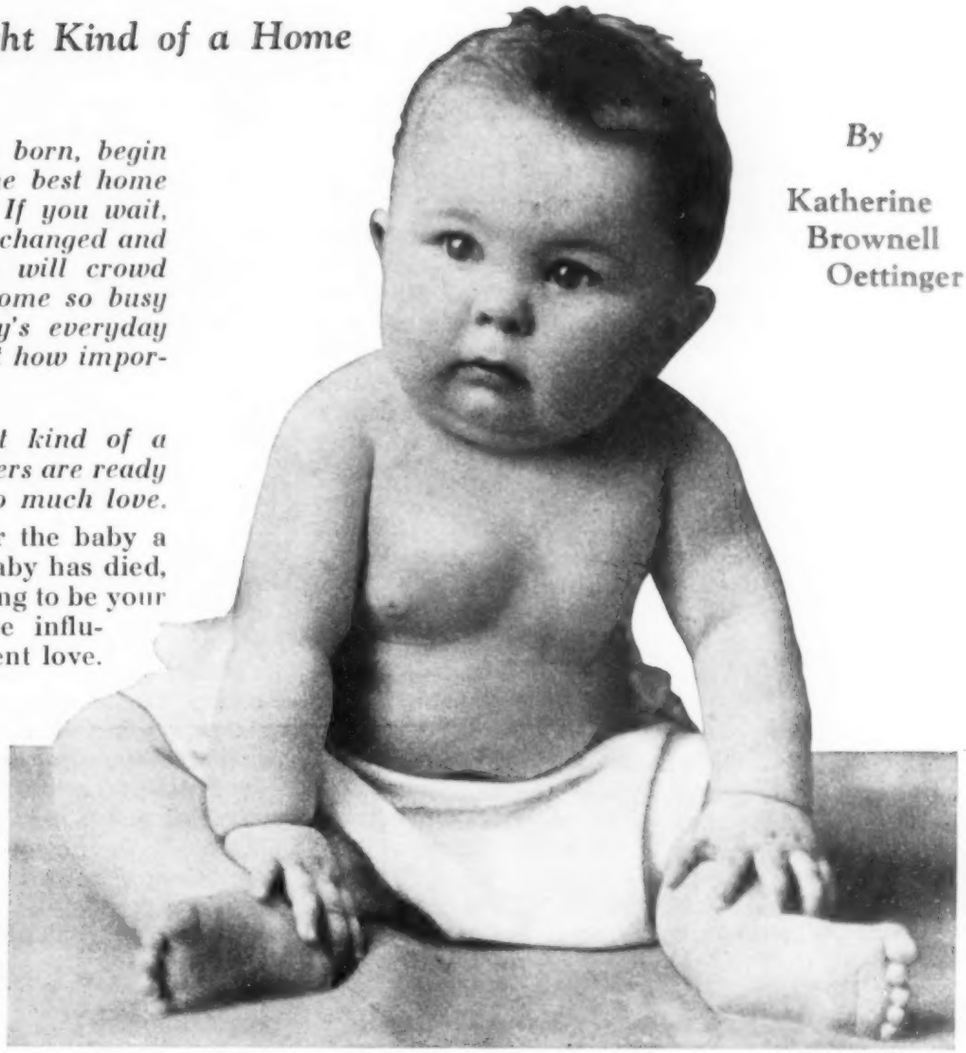
Sex is virile; it is unafraid; it sticks to the ship until the women and children are safe; it fights for its own; it takes chances; it makes sacrifices which may endanger life, property, everything. Boys will rise to an appeal to manliness, heroism and *(Continued on page 1048)*

BEFORE BABY IS TWO

I. Making the Right Kind of a Home

By Katherine Brownell Oettinger

BEFORE the baby is born, begin to plan to make the best home for him to enter. If you wait, there will be much to be changed and undone. New problems will crowd each day. You may become so busy just taking care of baby's everyday needs that you will forget how important attitudes are.



Ewing Galloway

I. It cannot be the right kind of a home if mothers and fathers are ready to smother baby with too much love.

If you have waited for the baby a long time or another baby has died, or if you fear this is going to be your last baby, you may be influenced by too great parent love. A happy baby never rules the family but learns to fit himself into the regular schedule of the home. Both mothers and fathers, in wanting to devote everything to baby, will have to guard carefully against letting this selfishness ruin his chances for happiness.

II. It cannot be the right kind of a home if either parent becomes so absorbed and interested in baby that the other is forgotten.

A home split by jealousy so that love of the baby takes the place that belongs to mother or father means happiness for nobody. Baby should not become an excuse for giving up too many of the social pleasures which mother and father enjoy together. Mother and father and other children have just as important places in the home as the new baby.

III. It cannot be the right kind of a home if the baby's coming is resented and nobody is happy about it.

Even a little baby understands an atmosphere in which he is surrounded by the love of his father and mother and has a special place in the home. This feeling of safety and security is his greatest need in life. Mothers and fathers cannot allow worries about lack of money, the things they cannot give the baby, or the inconvenience his coming may mean to their work or other interests to make baby fearful and uncertain. If there are real hardships about money, remember it is not the absence of things that will rob the baby, but the ill feeling, quarreling or worry that gives him a feeling of being unwanted, and makes him never quite sure of himself. It is harder to free himself from this than from real poverty.

IV. It cannot be the right kind of a home if mother is using the baby's coming to make her husband and every one else wait on her.

It is natural that the mother should have sympathy and understanding, but she must guard against letting her weakened physical condition tempt her to a self pity which reduces the family to constant attention.

Too often after baby's arrival she uses him as an excuse for any attention: "I have never been the same since baby came." Do not be a martyr. See your doctor. Be sure you are in perfect condition and then remember that the baby needs a healthy minded mother who is not always complaining.

V. It cannot be the right kind of a home if the baby's brothers and sisters are not ready to greet him.

Of course, you cannot expect them to be happy if they have not shared joyfully in the baby's coming. How can a 3 year old help being jealous if his place as baby has been taken without any warning? An older child often imitates baby habits, such as soiling, drinking from a bottle and crying, if he has not been made to feel that being a big boy and helping with the care of the baby is more worth while. It is not enough to tell the young child once about the new brother or sister; this does not have meaning to him. He must be allowed to talk and plan with you each day, so that mother and father prove over and over that he is still loved and important as a grown-up and may share the baby as his, too.

VI. It cannot be the right kind of a home if you are ready to welcome only a boy or only a girl.

A healthy baby should be the first wish of every mother and father. Do not handicap your child by making him a "boyish girl" or a "girlish boy."

VII. It cannot be the right kind of home if the mother or father is always looking for and worrying about bad traits which baby may inherit from mother, father or other relatives.

Children do not come into this world with a set way of acting. They learn from your teaching and from others in the home! Be sure before baby is a year old that he does not see any behavior you do not want him to imitate. All babies copy what they see. No baby is born with a temper "just like his father" or nerves "just like his mother."

VIII. It cannot be the right kind of a home if the mother's strength is sapped by fears about her physical condition.

While real worries sometimes must be faced courageously, there are many bugaboos that come to nothing when they are carefully examined. Do not let old wives' tales scare you about marking the baby. The best doctors, after careful study, say that this is impossible. Ask the nurse to show you just how baby is growing, and you will see for yourself how foolish it is to believe that having a fright or sorrow, or seeing disturbing movies could make any difference to the baby in his safe nest.

Do not feel alarmed if you find after reading this that you are not the perfect mother or father. The average home makes some of the mistakes some of the time. It is easier to steer toward better and more modern ideas if they are brought together for you to think about, now that you are undertaking this most important work in the world—the care and training of a new individual.

[NOTE.—In the December HYGEIA, Mrs. Oettinger's subject will be "Helping the Baby to Learn."]

Magic

Who makes fresh curtains suddenly look gay
The green leaves swaying on a willow tree;

Or ruffling a gown, delicate and thin,
Sense how the ocean waves come weaving in;

While piecing quilts concerns the flower beds,
All gayly colored with their golds and reds;

And hemming sheets is like the feel of snow,
Unwrinkled, smoothing out the world below.

But all these wonders well a woman knows
Who slips her needle through new baby clothes.

—CATHERINE CATE COBLENTZ.

Progress in Preventive Medicine

By P. M. Ashburn

PART IX

WITHIN recent years, knowledge of diseases of the ductless glands has grown apace. Mankind has always known goiter, giantism and dwarfism; diabetes is of ancient standing. It has also long been known that castration in man or animals profoundly affects both mind and body. It is only in recent years, however, that science has learned of internal secretions or hormones. These are substances discharged into the blood in minute amounts from the ductless glands, but they are so potent in influencing metabolism, growth, health, happiness and conduct that the knowledge of them acquired in recent years is one of the great advances of all time in the insight into physiology. Since it is recognized that knowledge of these secretions is still far from complete, there is no telling how much greater the advance may be. As yet too little is known to justify any extensive popular education in endocrinology, but a few facts have been popularized and should be the subject of further education.

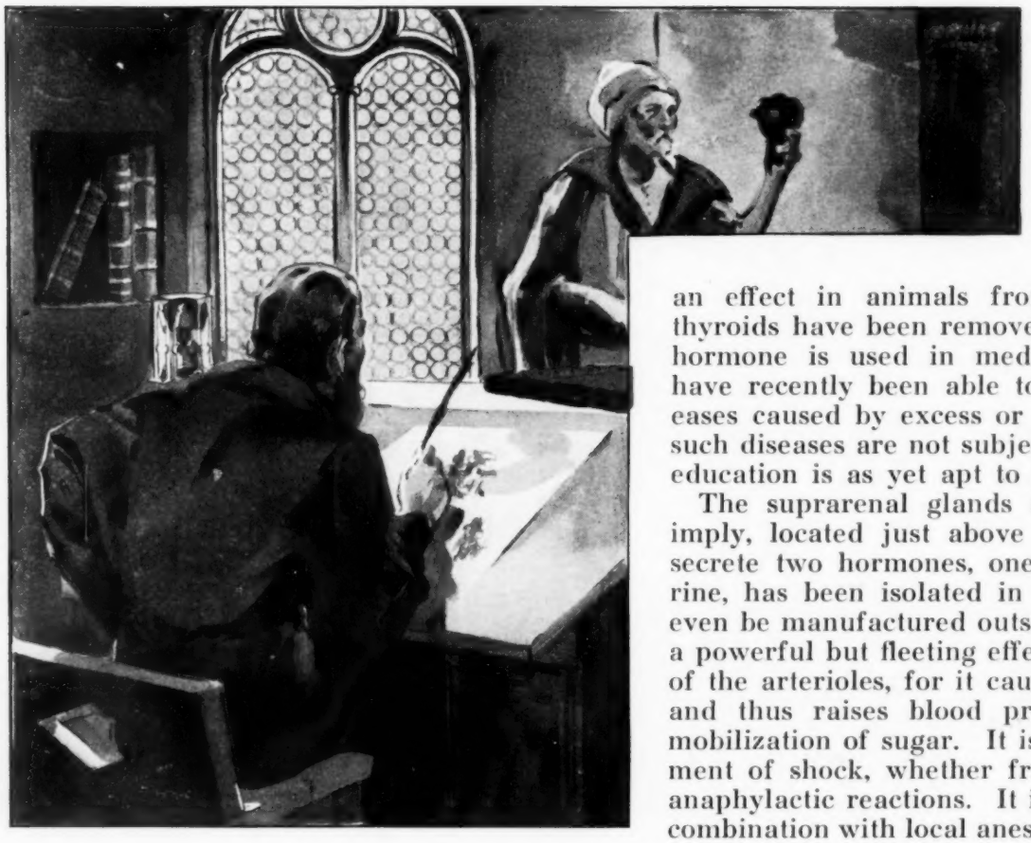
The ductless glands thus far recognized are the thymus and the pineal glands, both of which disappear or cease to function in childhood and are therefore grouped together as prepubertal glands; the thyroid; the parathyroids; the suprarenals; the pituitary gland; the internal secretory parts of the gonads (the testicles in the male and the ovaries in the female), and the internal secretory parts of the pancreas. These glands are interrelated in numerous ways, and it is unusual for one to be diseased without accompanying disturbances in others. All of them seem to exercise a profound effect on the nervous system, and most of them influence sexual life in one way or another. These things are not yet well enough understood to be made the subject of widespread popular education, but it is well that all should realize that sex is built into man in all parts of the body, that sexual desire is a biologic fact with organic bases, and that to regard its manifestations as the work of a devil and therefore to be treated only by suppression or by exorcism is as illogical and sometimes as cruel as were the same views and methods when applied to insanity or to bodily disease.

Leaving aside doubtful questions, there are a few in regard to ductless glands which are properly subject matter for popular education.

The thyroid gland secretes a principle which is of paramount importance in the regulation of the speed of general metabolism, the speed with which the body burns the food and expends the energy derived therefrom. In excess this secretion hastens and augments these processes, causes the body to burn not only the food but also its own tissues, produces a wasting so rapid, a nervous disturbance so great and a poisoning so severe as sometimes to cause death. Deficiency of this secretion results in a lowering of metabolism, a slowness of change and thought, and a clogging of tissues with water and with protein, so that the person appears dropsical. This is myxedema. A more profound lack of the secretion, especially in intrauterine life and from birth onward, results in a characteristic type of idiotic dwarfism known as cretinism.

The thyroid hormone is called thyroxine, and it has been obtained in pure crystalline form. It contains iodine, and in localities where iodine is scarce in food supplies and in water, as is true of many mountainous regions and in the region of the Great Lakes and the Mississippi Valley, the thyroid gland may undergo an enlargement, often unsightly, called goiter; if the deficiency is severe or prolonged, it may result in myxedema and some mental deterioration. This may all be prevented by the administration of small amounts of iodine; in regions where the disease is common, mass treatment with iodine has been resorted to under medical control or iodine has been added to water supplies or to table salt. The last two methods are uncertain in dosage, and it is best to have medical supervision of such treatment. Myxedema can be successfully treated by the use of thyroid extract, and cretinism can often be improved somewhat. Thyroid extract should be adminis-

Certain diseases are caused by opium.



Leonardo da Vinci was the first man to describe arteriosclerosis. He found evidences of it in one of his models, a centenarian.

tered only under medical supervision, as it is capable of exciting toxic goiter and of doing great harm if given in excess. Notwithstanding its dangers, this substance has been put on the market for more or less uncontrolled use as a treatment for obesity, an antifat medicine. As stated before, an excess of thyroid secretion will hasten metabolism and will cause one to burn not only one's food but also one's tissues. The first of the tissues to burn is the fat; hence thyroid extract will remove fat and may also remove it without any diminution in the quantity of food consumed, but its use for this purpose by persons without knowledge of its dangers has resulted in many disasters. The occasions when it is needed in the treatment of obesity are uncommon. Usually diet and exercise suffice to control that condition, but self control is difficult for the glutton, and some persons use thyroid extract to avoid the effort necessary for its attainment. There is room for additional popular education as to the dangers of the use of thyroid extract without medical supervision.

The parathyroid glands, small bodies located back of the thyroid gland and sometimes so imbedded in its substance as to be removed with it in operations for goiter, somehow control the metabolism of phosphorus and calcium. Possibly vitamin D, which also seems to control the metabolism of these substances, acts through these glands, for injections of irradiated ergosterol, which increase the amount of calcium in the blood of normal dogs, do not have such an effect in animals from which the parathyroids have been removed. The parathyroid hormone is used in medicine, and scientists have recently been able to control severe diseases caused by excess or deficiency of it; but such diseases are not subjects in which popular education is as yet apt to prove helpful.

The suprarenal glands are, as their names imply, located just above the kidneys. They secrete two hormones, one of which, epinephrine, has been isolated in pure form and can even be manufactured outside the body. It has a powerful but fleeting effect both on the walls of the arterioles, for it causes them to contract and thus raises blood pressure, and on the mobilization of sugar. It is useful in the treatment of shock, whether from trauma or from anaphylactic reactions. It is also much used in combination with local anesthetics to control the rate of their absorption and to lessen operative hemorrhage. It is to be used only in medical hands.

The other suprarenal secretion is not so well known in its effects, but it is apparently necessary for life. The diseases of the suprarenal glands are serious, but popular education cannot as yet have any part in their control.

The pituitary gland is located at the base of the brain, and it plays a part in growth and conduct out of all proportion to its small size. It consists of two parts which are anatomically and embryologically distinct, and it produces at least two, possibly more, hormones. The gland has a great influence on growth, and disordered conditions of it may produce giantism, dwarfism, acromegaly and a type of obesity associated with sexual infantilism. This gland is also greatly concerned in the sexual life, and its secretions to a large extent control menstruation and gonadal activity. An extract from one part of it is a powerful excitant of uterine contractions and is sometimes used to stimulate these during labor. Knowledge of this pituitary element in sexual instinct is of recent acquisition, and the fact that it may be responsible for a chastity no more creditable than that of a eunuch, and possibly for desire as much beyond volitional control as hunger, should put a larger element of understanding into our judgments of sexual behavior.

The pancreas, like the testicles, provides both external and internal secretions, the external containing powerful digestive ferments and the internal controlling the metabolism of carbo-

hydrates after they have been absorbed from the intestinal canal and have entered the blood. Absence or insufficiency of this internal secretion, insulin, is the immediate cause of the serious disease diabetes. This is more serious in proportion to the deficiency of insulin.

Man is far from knowing all about the causes of diabetes, but there is much reason to believe that overeating predisposes to it and obesity is so often associated with it as to suggest that there may be a common factor in their causation. Temperance in eating, particularly in the eating of sweets, which are consumed in enormous quantities by many persons, is as desirable as temperance in the use of alcohol. Children are not the most intemperate in regard to sweets. There is room for further educational effort in this matter. Eventually, after knowledge of the internal secretions has become enlarged and clarified, the field of usefulness of popular education in the prevention of diseases resulting from glandular disturbance may become greatly enlarged. At present it is distinctly limited.

There are large groups of diseases caused by physical agents, such as heat, cold, electric shocks, radioactive substances and compressed or rarefied air, and by such poisons as alcohol, opium and the general group of narcotic drugs. Education has been tremendously important in the control of these diseases and injuries, and it must continue to be so. Industrial hygiene, with its special instruction and protection for workers in each industry, is the means of teaching thousands how to preserve themselves and their fellows from the hazards of the industry. Education as to the dangers of opium and most other narcotics has been generally successful in keeping people from their use. Drug habituation is not nearly so common as many persons would have one believe.

Education had made great strides in promoting temperance in this country when the great social experiment was made to hold and accelerate these gains by statute law rather than by continuance of the education. The failure of that effort emphasizes the need for renewing the educational efforts, and these should be founded on knowledge and fact, not on sentiment, prejudice and misinformation.

It would be a pity if the lessons to be learned from the experiment of legal prohibition of alcohol should be wholly lost, and it appears that one lesson that might be learned from it is that prohibitions do not have the happiest effect on the adolescent mind. Perhaps it would be much better to lead the child through admiration and emulation to the things he should do rather than to prohibit his doing what one does not wish him to do, and to teach him to be self reliant and to face circumstances and his environment bravely and adventurously rather than to depend on others to settle his problems and guard him from unpleasantness.

Most persons with a normal outlook on life and with proper adjustment to their environments do not need or greatly care for alcohol, are not apt to indulge in it to excess or to become greatly dependent on it. Usually, excessive and habitual users of alcohol and other narcotics are persons troubled mentally from a sense of inferiority, from self consciousness, from a feeling of failure or inadequacy. They may be victims of circumstances which they cannot control and from which they are seeking escape. The tendency toward these states or the direction of thought and life most apt to result in them later is most liable to arise in childhood. It is perhaps not sufficiently realized that the education which makes for self control, temperance and the avoidance of feelings of inferiority, guilt and neurotic conditions is mainly that received in the home, largely that of the preschool years.

There is a large group of diseases of the later years of life which show increases, partly at least because more persons attain to the later years. Outstanding examples are cancer, arteriosclerosis and the results of arteriosclerosis. Little or no progress has been made in preventing them.

The cause or causes of cancer are not known, although much research on the subject is being carried on all over the world. Education has been helpful mainly in inducing persons of the cancer age to seek early examination and medical advice for any symptom or sign which might point to cancer, and particularly in teaching women to do this at the first appearance of signs pointing to the breast and womb. Early treatment may cure cancer, a statement now truer than ever before because of the aid in treatment afforded by radium and the x-rays.

Arteriosclerosis is perhaps a more or less normal process, experienced in some degree by everybody. The first man to describe it was the great Leonardo da Vinci. Many of his drawings were made from a centenarian, *il vecchio,* whose death he described: "He did not feel any failure in the body except weakness, and thus sitting on a bed in the hospital of Santa Maria Nuova of Florence, without any movement or sign of any accident, he passed from this life." Afterward Leonardo dissected his body and found that "the veins [he often used this term to include arteries] of the aged acquire great length and so become tortuous, those that are wont to be straight, and they become so thick in their wall that they close and prevent the movement of the blood. And from this comes death to the aged, without illness." Fortunate are the aged whose arteriosclerosis does not treat them worse than this! As a matter of fact, arteriosclerosis is one of the important factors in keeping men from becoming centenarians. All centenarians have it, but many more men die of it in the fifth and sixth

decades than in the ninth and tenth. All its causes are not known, but aside from the part of it which seems to be normal to age it may be caused or aggravated by infections, especially syphilis and chronic suppurations. Anxiety, worry and mental strain, such as that of the business executive or the stock market trader, seem to excite or aggravate it; the mental work of the philosopher or scientist does not. The best measures for avoiding it or for living happily with it are to avoid infections, anxiety and worry, to live not too strenuously and, best of all, to follow the advice of Oliver Wendell Holmes and choose one's grandparents wisely. With all four grandparents centenarians, a man is apt to become one himself, barring road accidents.

The time is approaching when man's knowledge of psychology will put mental hygiene on a secure basis and enable him through education to prevent much mental and neurotic disease, but accomplishments in this line do not yet loom large. This is an age of such rapid change in social, industrial and economic affairs, in religion and views of morality, that it is difficult for many persons to keep happily adjusted to their environments; consequently, these diseases do not decrease. But they will do so as more of their causes become known and the environing factors are better controlled.

The prevention of smallpox, the mosquito-borne diseases malaria and yellow fever, the gastro-intestinal infections and parasites, the respiratory diseases, the deprivation diseases, the disturbances of the ductless glands and other disorders have now been considered. I have pointed out to what extent education based on well proved facts has been effective in their control. On the other hand, medical history and present failures teach one how futile are all efforts at the prevention of diseases when the facts are not known. Throughout the world's history until recent times there was no method of disease prevention more effective than that practiced by some savages, that of abandonment of the sick man, his house and all his belongings, thereby making them all taboo.

Through all the period covered by written history down to the beginning of the nineteenth century, man was helpless before epidemics, and one after another these scourged him. From the days of the Roman Empire to the nineteenth century, medicine was ruled by Galen and the fantastic humoral theory. It was theoretical and ignorant of most of the things which now constitute the very foundations of medicine. Although given to wordy and windy speculation, to much scorn of the ignorance of the masses, to much pride in the learning of its followers and to frequent efforts to educate laymen through preachments and books, it could prevent nothing; and the education it inculcated merely served as the basis of much folk-lore and of many errors which still live. When it was believed that syphilis was due to astrologic influences or to adust humors passing out from the liver to the urine and thus excoriating the "shameful parts," how could education prevent it? When it was believed that smallpox was due to the casting out of the body of the menstrual blood of the mother, which remained in the child's umbilical veins until, at the age of 2 or 4 or 10 years, the child became strong enough to cast it off, with smallpox as the result, how could any child hope to escape? When it was thought that tertian malaria was due to corruption of bile in the blood vessels, what chance was there to prevent malaria? Or when worms were supposed to be spontaneously generated in the bowel from "corruption of aliment," how could they be prevented except by feeding incorruptible aliment, which has never been found? What earthly chance was there to stop an epidemic of plague until it was learned that it is a disease of rats conveyed to man by fleas from the rats, or of stopping the spread of the sleeping sickness which promised to depopulate much of Africa until we knew that it was caused by a trypanosome which was transmitted by a tsetse fly? History answers as to all these and other diseases, "No chance."

These things are emphasized because it is well to bear in mind that medicine is not one grand progress, that its history shows more mistakes than achievements, more failures than successes, that its large accomplishments are all comparatively recent, that successful education must follow fact finding.

So, let every one persist in disseminating the facts; but even more in keeping open the doors of the mind for new facts and, better still, engage in searching and experimenting, in trying, not in guessing, not in teaching what some one thinks should be. May it not be said of man today as of his fathers of old, that

> "Most of their teaching was quite untrue,
> Most of their remedies cured you dead."

For teaching those things which are really known, science is almost certain to rely more and more on the assistance of the schools and churches, the teachers and preachers, the newspapers, journals and radio, and most of all on the home and enlightened parents. Most persons learn basic hygiene at home. There one is taught habits of personal cleanliness, propriety of conduct and a certain amount of consideration for one's neighbors. It must be borne in mind, however, that the educational agencies mentioned are liable to accept as fact that which is merely new, plausible and intriguing, that which masquerades as science but is often only enthusiasm and at times is nothing better than cupidity. Let us make haste slowly.

[THE END]

Ewing Galloway

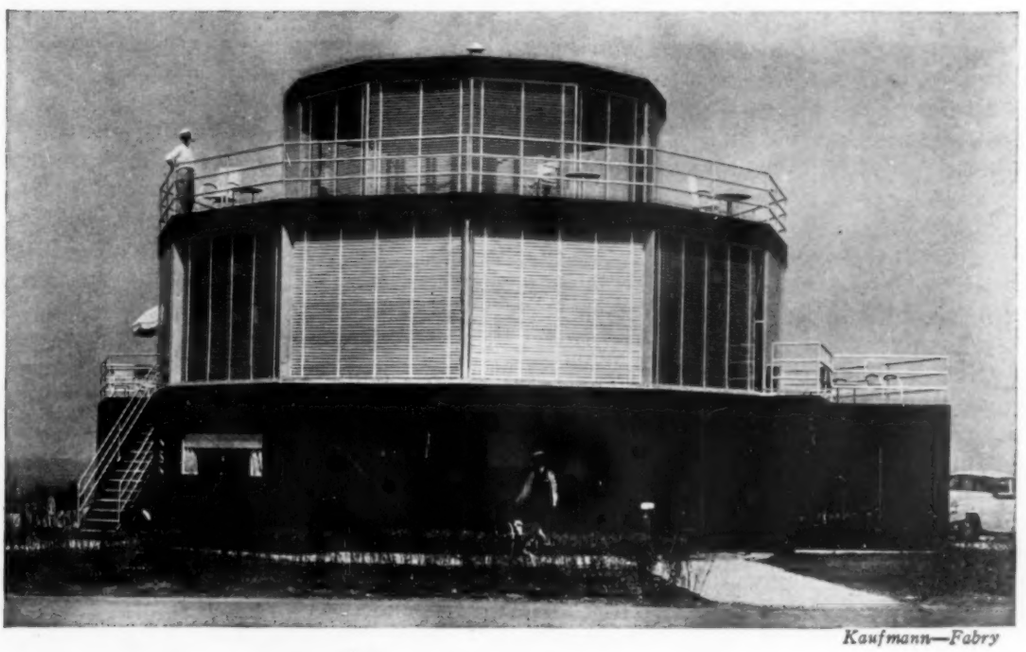
The Court of Honor at the 1893 Exposition in Chicago offers striking contrast in architectural design to the buildings of A Century of Progress.

The Glass Block Building at A Century of Progress is shown below. These blocks, approximately the size of ordinary paving bricks, are varicolored and semi-transparent.

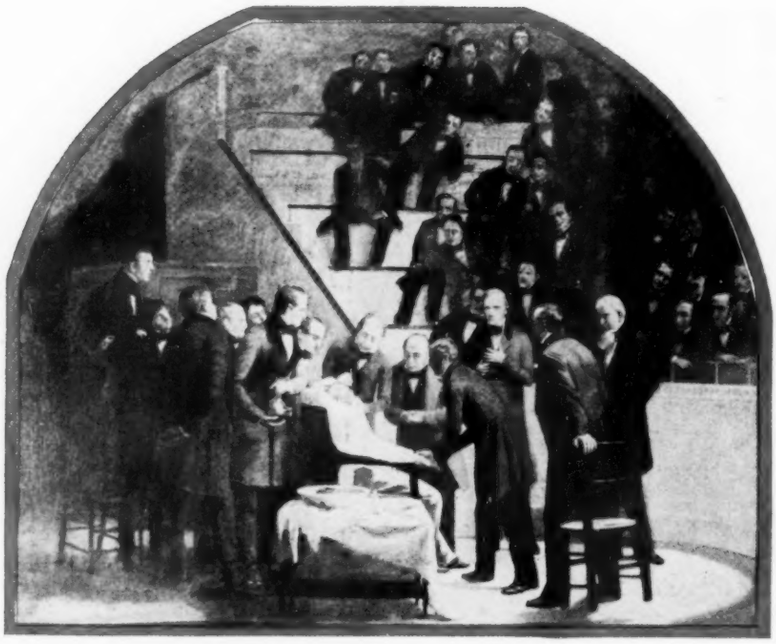
Kaufmann—Fabry

Views from A Century of Progress

To the right is the "House of Tomorrow," a circular glass house, which represents a new type of home. Air conditioning, an airplane hangar on the ground floor, deck terraces and "no windows" are only a few of its many features.



Kaufmann—Fabry



THEN—

A Century of Progress in Surgery

With the introduction of anesthesia, surgery took a great stride forward. Oct. 16, 1846, a little less than a century ago, William T. G. Morton gave the first successful public demonstration of ether anesthesia. Dr. John Collins Warren performed the operation.

ONE HUNDRED years ago the surgeon himself was the team. His brain easily held all the facts then known. His hands executed the few simple tricks of practice. It was the stone age of surgery. His stroke with the knife was the gamble that was left to a life in distress. It was surgery in the raw, without anesthetics, without antiseptics, without science, without art, without organization. With a bold stroke, this lone figure opened abscesses, cut for stones and hernia and strictures, lopped off limbs, boxed up fractures, wrestled with dislocations and quarreled with his rivals.

There were no specialties. Even the practice of surgery was not a specialty. In the preface to the third edition of his "Institutes and Practice of Surgery," published in 1835, William Gibson writes: "It has been customary, in Europe, for sake of professional convenience and subdivision of labour to separate the practice of surgery from that of medicine; but the result has never proved satisfactory to practitioners and rarely if ever to patients." As a further deterrent to his pupils from attempting to devote themselves exclusively to the practice of operative surgery, he quotes one whom he cites as "the most eminent surgeon and physician this country has ever seen" as declaring that "the whole operative surgery of one of our largest towns would barely be sufficient to support a single individual."

One hundred years ago there was no planned operation for hernia; no tumors were removed from the abdominal cavity; no thyroidectomies were performed; there were no operations for the removal of gallstones; brain tumors were not disturbed; there was no gynecology, no control of infection, no prevention or treatment of surgical shock and no adequate treatment for hemorrhage. The x-rays had not yet illuminated the body; there was no skin grafting; there were no tonsillectomies, no laryngectomies and no effective treatment of cancer. One hundred years ago, without anesthetics, surgical performance had to depend on the hot iron and the swift knife, on a steady hand and on quick intuition. It was the art of a swordsman rather than of a scientist.

The progress of surgery during the past one hundred years is a romance. With the discovery of anesthesia and the establishment of aseptic and antiseptic surgery, based on the scientific foundation of bacteriology, surgery became not only more exact but more conservative. In the treatment of wounds and fractures, conservative surgery replaced the former hastily performed mutilating operations.

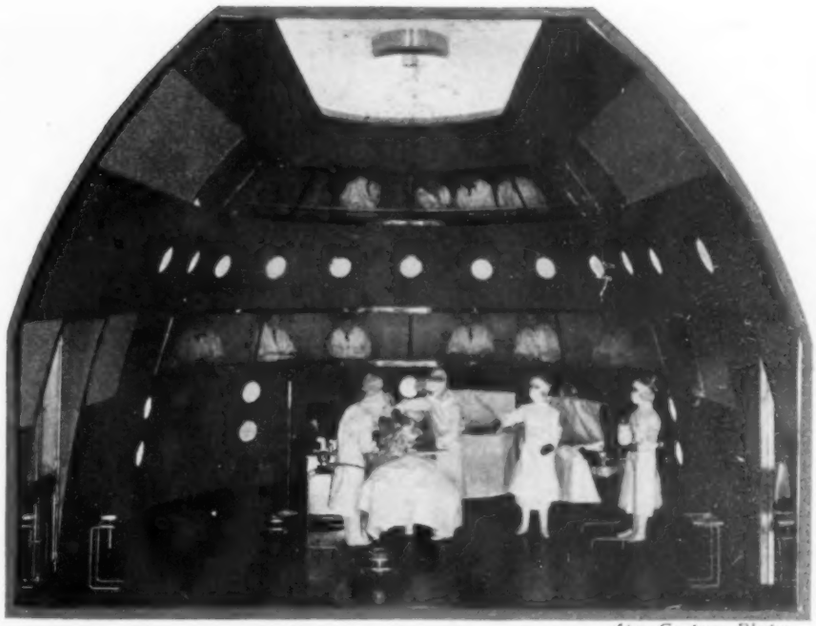
During this century, the United States entered the field of medical discovery and development. Science knows no political boundaries; it is international. One hundred years ago the Atlantic was crossed by the slow power of the wind and sail; now it is crossed by wire, wireless, airplane and television. The mechanisms of world communications have been like the myelinization of the human infant. This is the century of pathology, bacteriology, chemistry and physics.

Within the past one hundred years the development of anesthesia has made it possible for all operations to be rendered painless. Wound infection is now not only controlled but prevented. The accidents of childbirth are now repaired; cesarean section is almost as safe as normal delivery. The cleft palate, the harelip, the webbed fingers and toes, the club foot, the dislocated hip—all these errors of nature are safely corrected. The hemophilic child now receives whole fresh ovary and blood transfusion. The infected tonsils and adenoids, which one hundred years ago laid the basis for crippling the heart and producing rheumatic

and NOW:

By
GEORGE W. CRILE

The modern operating room typifies the advance of surgery to a miracle of scientific precision. The discovery of anesthesia and of methods of asepsis and antisepsis, the organization of the "surgical team," and man's mechanical inventions all shared in this rapid development. (From "Electricity at Work," exhibited at A Century of Progress Exposition.)



Apex-Century Photos

fever, are now safely removed. Hernias of every kind are repaired; fractures are adjusted with precision; physiotherapy supplements the surgery of joints, muscles and nerves. Empyemas are cleared. The appendix, the gall-bladder, peptic ulcer, pelvic tumors, tubal infections and tumors of the brain are dealt with. The heart itself is now explored. Thousands of patients with cancer in any part of the body are now cured by surgery and by radiation. By instruments of almost infinite precision the eye has been accurately measured, and operations of meticulous delicacy are now performed. Every organ and tissue of the body is subjected to surgery. Many specialties have been developed. Goiter surgery, genito-urinary surgery, neurosurgery, orthopedic surgery and others are products of the anatomic-pathologic period.

Among the foregoing advances in surgical science during the past century, there are four which should be specially emphasized, since on them have depended all the others. These are the discovery and development of anesthesia, the discovery and development of methods of antisepsis and asepsis, the prevention and treatment of surgical shock, and the treatment of hemorrhage by blood transfusion.

The painlessness of operations originally secured by inhalation anesthesia alone is now achieved by local, regional or spinal anesthesia, or by any combination of these with inhalation anesthesia, according to the indications of the individual case.

The high mortality which in the earlier part of the century attended surgical operations was due not so much to faulty technic or to lack of skill, for vital organs were rarely attacked, as to shock, hemorrhage and infection. Even after the consciousness of pain was overcome by a general anesthetic and after infection had disappeared from the first operative period, there remained two great menaces to the surgical patient, shock and hemorrhage. During or after an operation in which no vital organ was concerned, patients too often would become pale, cold, clammy and exhausted, and would fail gradually or quickly until death.

The controversy regarding the physical nature of shock may not have been settled to the satisfaction of all controversialists; nevertheless, by various methods of prevention and of treatment, the dangers of this age-long menace of the operating room have been virtually eliminated.

The transfusion of blood is now everywhere used to combat the emergencies of shock and hemorrhage. The technic of transfusion has been so perfected and the grouping of blood has been so well established that in addition to the transfusion of blood in the treatment of shock and hemorrhage, blood transfusion is used as a routine procedure for building up the patient so weakened by disease that operation otherwise could not be undertaken. Then too, scientific investigation has shown that there is a definite relation between the trauma of operation and shock; it has proved that certain regions of the body, notably those most richly supplied with nerves, are the more susceptible to shock; that there is a direct relation between the depth of surgical shock and the number, frequency and force of contacts of instruments, sponges, retractors and hands; that a heavy-handed, uncertain-minded surgeon has a high mortality from shock and that a deft-handed, keen-minded surgeon has a low mortality from shock. In a sense, the surgeon himself may be a disease to his patient.

For a long time, ether and chloroform were believed to confer complete protection on the patient, but researches on animals and in the clinic soon proved that the damaging impulses spread throughout the entire nervous system

The crude methods of the barber surgeons were once the acme of surgical skill.

from the point of injury and not only involved the brain and the nervous system but also produced depression and exhaustion in certain other vital organs, notably the liver and the suprarenal glands. Indeed, directly or indirectly, every organ, tissue and cell of the entire organism was involved. This body-wide change was reflected even on the chemical constituents of the blood and of the excretions. In other words, the surgeon crudely disturbed the infinitely delicate electrochemical system which expresses life; namely, protoplasm.

Ether Has Caused Many Tragedies

Countless times, a physically healthy individual was rendered unconscious by ether; an operation was performed, and because the patient could utter no cry, could articulate no protest, this protoplasmic organism, as sensitive as a photographic plate, as a photo-electric cell, was punished to exhaustion and death. The death was counted as natural and inevitable, obeying no physical law, just as death from the plague was considered before the rise of bacteriology. But although the unconscious patient uttered no spoken word of protest, no spoken word of appeal for mercy, he proclaimed eloquently his distress by an accelerated heart beat, by sweating, by pallor, by cold clammy skin, by shallow hurried respiration, by dilated pupils, by falling temperature, and finally by death on the table under anesthesia.

Analysis of this tragic sequence of events—tragic for the patient and tragic for the surgeon, for the two were equally helpless—showed that chloroform and ether caused anesthesia by chemically and physically interfering with, and by chemically and physically injuring, the protoplasm of the victims. Ether and chloroform brought a blessing and a curse—the blessing of cessation of pain, the curse of protoplasmic poison in every tissue and organ of the body. In small doses these lipoid solvent anesthetics are stimulating, and in doses sufficient to produce surgical anesthesia they depress and poison the protoplasm in plants and animals alike. Investigations showed that as the result of the damage wrought by ether or chloroform on protoplasm a normal animal will die if kept under surgical anesthesia for from four to six hours. As the result of the damaging effects of ether or chloroform alone, a patient who has been under ether anesthesia for one hour has, roughly speaking, lost one sixth of his factor of safety. The lighter gaseous anesthetics, nitrous oxide and ethylene, damage the protoplasm but little by comparison. These considerations and one more led to a rapid diminution in the use of ether and chloroform, for researches have also proved clearly that local, regional, splanchnic and spinal anesthesia completely prevent shock as well as pain.

These anesthetic methods are now displacing ether and chloroform. Logically then, there has been developed a system of combined anesthesia: local, regional, splanchnic or spinal, in various combinations, supplemented by the light gaseous anesthetics, nitrous oxide and ethylene, as required. This system of combined anesthesia covered every need of the patient excepting the elimination of the damaging effect of the emotions of worry and fear preceding the operation.

Anociation Reduces Mortality Rate

The emotions affect directly or indirectly every organ and every cell of the body, just as shock does. Now, by the judicious preoperative use of morphine, by a grouping of nursing care and management, nerve blocking and harmless anesthetics, a system, called anociation, which excludes all harmful stimuli, is set up. This system has yielded most constructive results as shown by the fact that nitrous oxide anesthesia has been employed alone or as a part of this synthesis in operations on 120,125 white patients in the Lakeside and Cleveland Clinic hospitals with only three anesthetic deaths, or 1 in 40,000. Owing to these factors and accumulated experience, the mortality rate of all operations in a general service has been reduced to but a frac-

tion of that of even twenty-five years ago. Not only has the mortality been so strikingly reduced, but the persistent disabling neuroses and psychoses have been correspondingly reduced.

Lister introduced antisepsis into surgery. This century has metamorphosed antisepsis into aseptic surgery. Long and Morton introduced the harmful lipoid solvent anesthetics; these are being metamorphosed into a harmless system of combined anesthesia.

In the latter part of the century, methods of resuscitation in cases of suspended animation were elaborated which, though disappointing in their scope, saved many lives.

Surgical Team Adds Another Factor of Safety

Perhaps one of the most notable achievements was the organization and the perfection of the surgical "team," for, to carry out successfully the present-day highly integrated system for the patient during dangerous and complicated operations, it is obvious that dependence must be placed not on the surgeon alone but on a team of which he is the captain. This team consists of the surgeon-in-chief, the anesthetist, the scrub-up nurse, first and second operative assistants and the nurse in charge of the patient. Each member of this team must be impressed with the necessity for gentle manipulations and sharp dissection, for the facts on which the principle of anociation is founded indicate that the manipulations awaken phylogenetic noci-associations, with consequent activation for defense, and exhaust the organs composing the kinetic system, especially the brain. In addition, actual coincident trauma is produced by traction on the tissues beyond the zone which is protected by the infiltration of the local anesthetic. On the other hand, the division of the tissues with a sharp scalpel is a form of injury which awakens less phylogenetic association and, in addition, produces the least amount of damage to the tissues. Gentle manipulation and sharp dissection produce the least amount of tissue injury; therefore they necessitate the minimum amount of healing. Clean-cut wounds give the least postoperative discomfort. It should be borne in mind also that trauma, by diminishing the vitality of the tissues, predisposes them to infection. For every reason, therefore, the tissue trauma should be as light as possible.

During the last century there has developed an increasingly close connection between the laboratory and the surgical clinic. The connection of the laboratory with the clinic really dates from the end of the eighteenth century and the work of John Hunter, although the final transmission of the impetus he gave to scientific research in surgery was delayed, of necessity, until the further rise of science; for even animal experimentation depends on anesthesia and asepsis. At first applied largely by the surgeon to the development of an improved technic and to the extension of the fields of operation, chemistry and physics have now both been called on to aid the surgeon in his methods of diagnosis and of treatment until biochemistry and biophysics have become his chief reliance.

No account of the progress of surgery in the past one hundred years would be complete without reference to the value of the experience gained in the World War in which the great principles in the treatment of shock were finally established. It became known then that the best treatment for shock, whether resulting from hemorrhage or from exhaustion, includes rest, warmth, fluids, morphine, and blood transfusion. The war also established one other important dictum—the same fact as that which emerged from the post-Listerian period—that the one requisite of successful surgery, whether war surgery or civil surgery, is the good surgeon.

One of the most important developments in these hundred years, especially in that portion of these hundred years that belongs to the twentieth century, has been the training of the good surgeon.

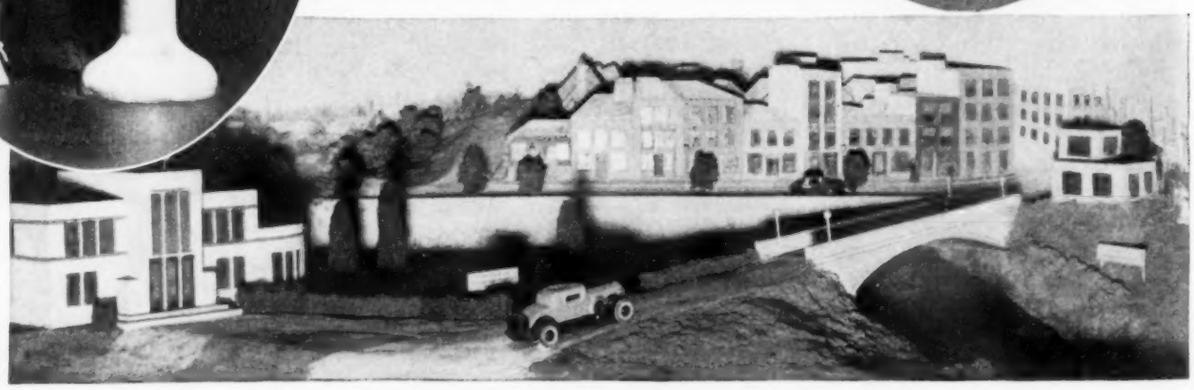
The Public Demands the Best

One hundred years ago a brief period in a poorly equipped medical school, followed by apprenticeship to a physician and surgeon, was considered sufficient preparation. Today, a premedical course in college or university, four years in medical school and four more years of rigid training is required for a high order of surgical training. Medical schools and hospitals are graded according to rigid rules of the American Medical Association and the American College of Surgeons and, although inferior schools and inferior hospitals still exist, the public is being educated to demand the best.

All these milestones which have already been described are in the domain of pathologic anatomy, bacteriology, the general advance of science, a magnificent hospitalization and a high order of teaching. Medical science has now advanced well into the most fascinating field of all, that of pathologic physiology. It is the result of the advance into the domain of pathologic physiology that the thyroid is removed for exophthalmic goiter, that adenomas of the pancreas are excised, that the hypophysis is invaded, that sympathetic ganglions are excised in Raynaud's disease, that the sensory root of the gasserian ganglion is divided for neuralgia, that various parts of the sympathetic nervous system are excised for this or that disease, that the parathyroids are removed for osteomalacia and that this ganglion or that nerve is excised to allay pain, reduce stress and strain, and restore tranquillity.

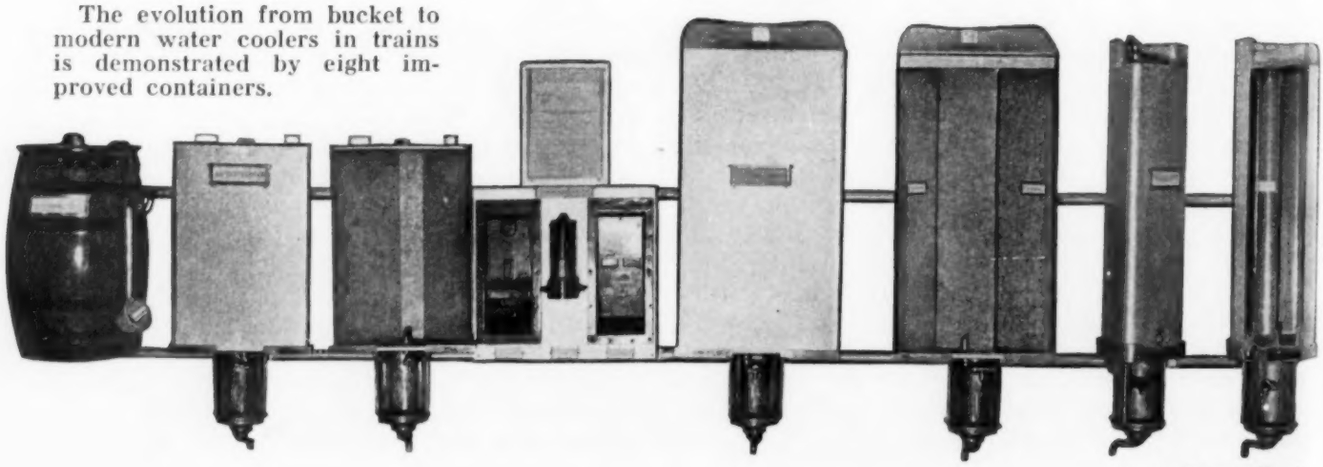
Surgery is rapidly becoming an exact science which can count its assets not in millions but in billions of dollars *(Continued on page 1049)*

At A Century of Progress, dioramas display the striking contrast offered in the old open well pictured above and the new pumping station below. The water bubbler has supplanted the water bucket.



Vivid Portrayal of Development of Water System

The evolution from bucket to modern water coolers in trains is demonstrated by eight improved containers.



Century-Korth

The Jolly Juice Twins

By Ivah Simpson

TOMMY Tomato Juice was fast asleep in his glass jar on the bottom shelf of the refrigerator. Suddenly, however, he awoke with a start, for the door was flung wide open, and a hand reached in and closed around his neck.

"Sa-a-ay," began Tommy with a gasp. Then he sneezed loudly, "Kerchoo! Kerchoo! Kerchoo!"

"Gracious!" said Mrs. Phillips as she put him on the kitchen table. "What's the matter with you?"

"Matter?" he snapped. "You know very well what's the matter. Drafts of warm air always make me sneeze."

"Oh, don't be so cross, Tommy," said a cheerful little voice right behind him.

"Now, Ora Orange Juice," he began angrily; but as he turned around, he was so amazed that his eyes almost popped out. There on the table sat the daintiest little creature he had ever seen, and while she did not look like Ora Orange Juice in the least, yet he knew indeed that it was she.

He rubbed his eyes and looked again, but she was still there. As he looked at her more closely, he saw that she had big blue eyes, a little turned-up nose, round rosy cheeks, and long black curls of crêpe paper.

Then as the look of bewilderment left his face, he began to laugh; and he laughed so hard that he splashed himself against the sides of his glass jar.

"What's the matter?" she asked anxiously.

"It's your hands and feet," he shrieked. "Your hands look just like white forks, and your feet look exactly like black spoons!"

She looked at them a minute; then she clapped her hands together and giggled, "They are, Tommy. They are. And if you'll look closely, you'll see that they are made of construction paper."

Then she smoothed her little orange crêpe paper skirt, pulled down her little jacket that matched it, straightened the big green bow at her throat, tossed her black curls, on which there sat an orange tam trimmed in green, and said earnestly, "Tommy, I do hope you like these clothes, for you see you have some almost like them."

"Clothes like that for me!" he shouted indignantly. "I don't want them. I won't have clothes. They're too much trouble to put on."

"Why, Tommy Tomato Juice!" said Mrs. Phillips in surprise. "You talk just like Billy." Then she smiled at him and said gently, "But of course, you'll wear the new clothes I've made for you. And won't you and Ora have fun surprising Betty and Billy!"

Tommy shook his head and said quite flatly, "No, I won't, for I don't like Betty and Billy. They were rude to me yesterday. They shoved me away from their plates even when I told them I'd give them my XYZ vitamins."

"Tommy Tomato Juice!" cried Ora as if she could not believe what she had heard. "You don't know your alphabet at all."

"I don't care," he retorted sulkily. "I don't see why I should remember those old ABC things anyway."

"Why," she sputtered in excitement, "you simply must remember them. We have vitamin C, and the children need it, you know, to keep them well and strong. But of course, if you can't tell them about it correctly," she said airily, "I don't blame them for pushing you away."

"Um-m-m!" he said after thinking a minute or two. "Oh, of course, you're right, Ora; but somehow I just can't keep those old letters straight."

"Listen," she said thoughtfully, "If you'll just remember that we're sometimes called the Vita-

min C Twins, I'm sure you won't have any more trouble with your alphabet at all."

"Come, Tommy," called Mrs. Phillips as she unscrewed the cap on the glass jar. "You must get into your clothes at once. The children will be here soon, and you must be ready for them."

At first he was so frightened that he could not utter a word, and for a minute he shook and trembled so that he almost splashed right out of the jar. Presently, however, he managed to ask in a shaky little voice, "Where are my clothes, Mrs. Phillips?"

"Here they are," she said, patting him gently on the back as she placed them on the table before him. "How do you like them?"

"Oh! Oh!" cried Tommy. "I like them ever so much." Then he clapped his hands and said, "Just look! There's a red suit with knickers and a coat trimmed in bands of green. There's a white collar, a green tie, a green belt and a red cap with a green bill."

"And did you notice," asked Ora, "that your clothes have arms and legs like mine fastened to them?"

"No," he said gloomily pointing at the ears, "I've been looking at them, and I don't want them. Billy doesn't like ears either. They're always getting dirty, and then they have to be washed."

"Pooh," she said, sniffing disdainfully, "you can be thankful you haven't long curls like mine. Hair has to be combed and brushed, and it hurts, too, if you want to know."

"Say, Ora," he asked quite suddenly, "how in the world do I get into these clothes?"

"That's easy!" she answered. "Mrs. Phillips will pour you into them."

"Pour me into them!" he cried in astonishment. Then he shook his head sadly and added, "But I don't see any opening in them where I can be poured in, and I don't see how I'll be able to stay in them after I'm poured in."

Ora tossed her black curls and said contemptuously, "Didn't you know that these clothes are all fastened to paper cups and that we're simply poured into the cups?"

"No," said Tommy meekly, "no, I didn't know it."

"Oh," she said impatiently, "you . . ."

But he broke in with a puzzled expression on his face, "Ora, I don't see yet how I'm going to get into the cup."

Mrs. Phillips picked up his cup, which was decorated with the red and green clothes, laughed at him and said, "Look, Tommy. Your cap is only pasted to the rim of the cup, and it is left loose in the middle."

She put her hand down through the center of the red cap, which was open, and pulled up a round flat cover from the cup.

"Yes, yes, I see now," cried Tommy. "Oh, please, Mrs. Phillips, pour me in quickly!"

So she picked up the glass jar and let Tommy run from it into the paper cup, which was decorated with its gay clothes of crêpe paper. When she had punched a little hole in the center of the flat round lid which she had put on the table, she put it down through Tommy's red cap, pushed it down tightly on the cup and folded the red cap flat on it.

She went over to the kitchen cabinet and took out two long straws. She pushed one into Tommy's cup right through his cap and one into Ora's cup right through her tam; then she quickly placed the Vitamin C Twins on the dining-room table, for she heard Betty and Billy at the door.

"Mother," said Billy in a whining tone as he came into the dining-room; but as soon as he saw the Vitamin C Twins he began to laugh.

"What are you laughing at, Billy?" called his sister as she came hurrying into the room; but just then she saw the twins, and she began to laugh too.

As they sat down to the table, Ora Orange Juice said, "Hello, Betty. Hello, Billy. I hope you children like these new clothes which your mother made for Tommy and me."

"Yes, yes, of course, we do," said Betty.

"Yes, indeed," agreed Billy heartily.

"I'm so glad," said Ora with a smile, "for we have something nice to give you."

"Um-m-m!" said Tommy, frowning and scratching his white paper ear. "Yes, we've something very nice for you." Then all at once he smiled happily, held out his cup and said to Betty, "Here, Betty, take it. It's full of vitamin C, clear to the top."

Ora Orange Juice nodded her little head and smiled at Tommy. She was proud of him, indeed, for he had just proved beyond all doubt that at last he had learned his vitamin alphabet.

HOW TO MAKE THE

THE Jolly Juice Twins are made of plain white paper cups, the kind with flat lids that fit down securely.

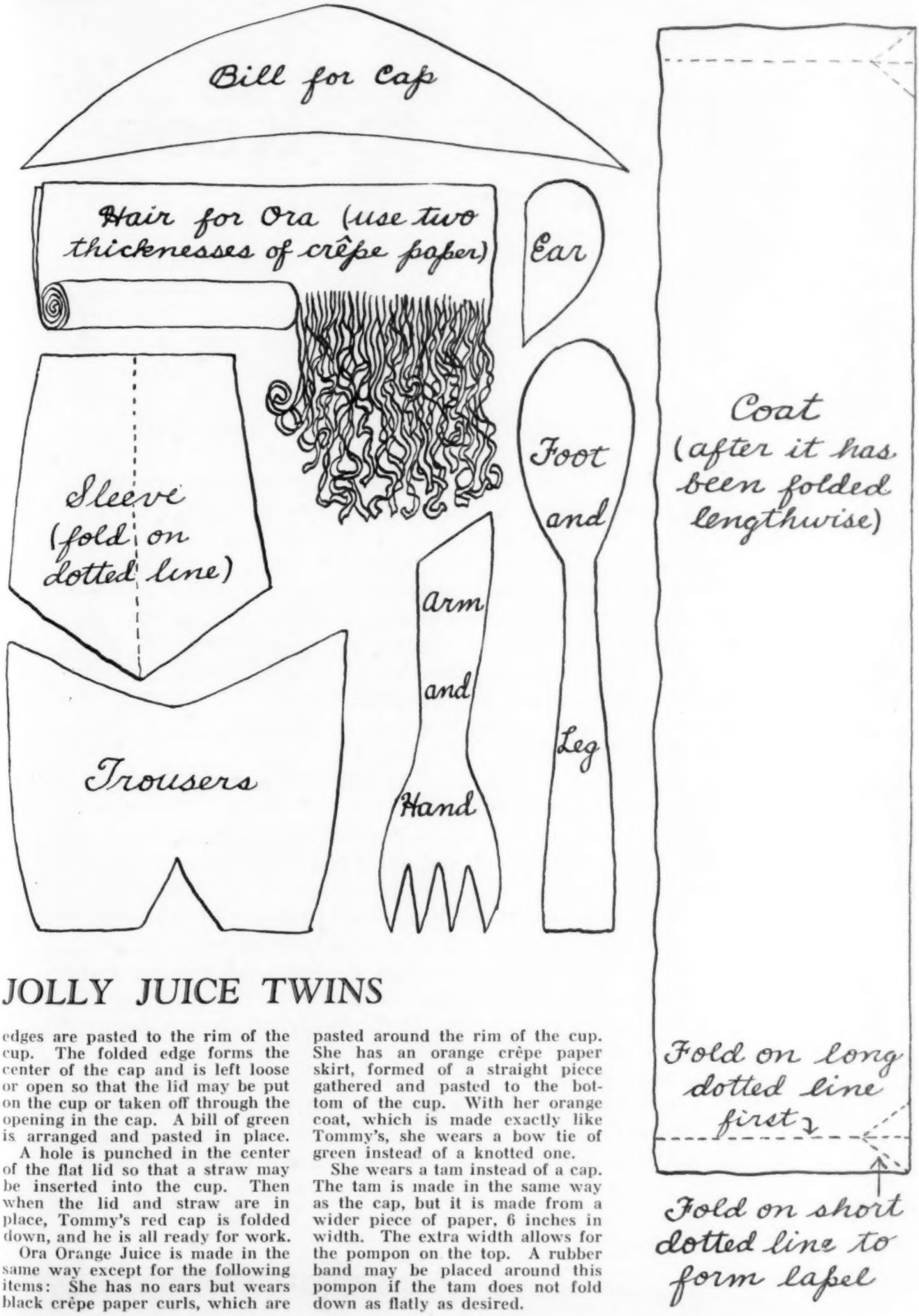
The faces are painted on the cups with colored crayons. Tommy has ears cut from white paper and pasted in place.

His trousers, cut from red crêpe paper and trimmed with bands of green, are pasted to the bottom of the cup; and to these trousers are pasted legs and feet which are cut from black construction paper.

A fold of white crêpe paper is pasted around his neck for a collar, and a green tie is pasted in place.

His coat is a straight piece of red crêpe paper, 8¼ inches long and 4 inches wide. It is folded down the center lengthwise. Each end is turned back ¼ inch, and the upper corners are turned back to form lapels. This strip of paper is then pasted around the lower part of the cup. To this coat are pasted arms and hands cut from heavy white paper and enclosed in red sleeves.

His cap is a straight piece of red crêpe paper, 5 inches wide and long enough to reach around the rim of the cup. It is folded down the center lengthwise. Its open


Bill for Cap
Hair for Ora (use two thicknesses of crêpe paper)
Ear
Sleeve (fold on dotted line)
Foot and Leg
Coat (after it has been folded lengthwise)
Trousers
Arm and Hand
Fold on long dotted line first
Fold on short dotted line to form lapel

JOLLY JUICE TWINS

edges are pasted to the rim of the cup. The folded edge forms the center of the cap and is left loose or open so that the lid may be put on the cup or taken off through the opening in the cap. A bill of green is arranged and pasted in place.

A hole is punched in the center of the flat lid so that a straw may be inserted into the cup. Then when the lid and straw are in place, Tommy's red cap is folded down, and he is all ready for work.

Ora Orange Juice is made in the same way except for the following items: She has no ears but wears black crêpe paper curls, which are pasted around the rim of the cup. She has an orange crêpe paper skirt, formed of a straight piece gathered and pasted to the bottom of the cup. With her orange coat, which is made exactly like Tommy's, she wears a bow tie of green instead of a knotted one.

She wears a tam instead of a cap. The tam is made in the same way as the cap, but it is made from a wider piece of paper, 6 inches in width. The extra width allows for the pompon on the top. A rubber band may be placed around this pompon if the tam does not fold down as flatly as desired.

I Want to Know

A FIRST PHYSIOLOGY

By Oscar Reiss
and
Dorothy Walter Baruch

III. What Happens When You Eat

Your teeth break up the pieces of food into tiny bits.

WHEN you sit down at the table, you take your fork and pick up a mouthful of spinach, perhaps, or a mouthful of potato or meat. You chew and chew; and as you chew, your teeth break up the pieces of food into smaller and smaller bits, and the watery saliva inside your mouth mixes with the bits of food.

Jerry took a dry piece of bread. He started chewing, looking thoughtful the while.

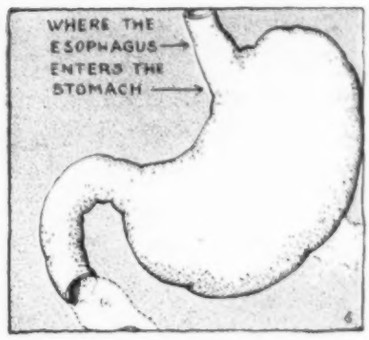
"Yes," he said in a few seconds, "it's gotten all wet." And then he almost shouted a discovery, "And it's turned sweet."

That was because the digestive juices in the saliva had begun to digest the bread, to change it and make it turn sweetish. The saliva also makes the food slippery, so that it is easy to swallow.

When you swallow, the food goes down your throat, down a tube called the esophagus.

At first John thought that the tube was perhaps hard like a metal pipe; but he soon learned that it is more like a rubber hose, except that its inside is softer and moister, much like the inside of your cheek, which you can feel with your tongue.

Down this esophagus tube the food travels until it reaches your stomach. But even so, it has not gone down far, not even quite as far down as your navel.



The stomach is shaped like a duck without a head.

The stomach looks like a balloon made of muscles and shaped like a duck without a head.

When food reaches the stomach, the inside of the stomach pours out digestive juices onto the food, just as the mouth poured out saliva. At the same time the stomach starts to grind and churn the food, mixing it thoroughly with the juices. And then the food goes further. The stomach squeezes it out, a little at a time, taking from two to four hours for the whole amount to pass on.

It goes, then, into a twisty, curling tube called the intestine. If you could take the intestine out of the body, stretch it along the floor and measure it with a tape measure, you would find that it was about 22 feet long; that is, about four times as long as your mother is tall. Naturally, there isn't room for the intestine to stretch out inside your abdomen; so instead it is coiled in loops and twists.

"And the food travels a long way all through the coils," wisely commented Jean.

And as the food travels, digestive juices are again poured over it from the lining of the intestine. Juices are added also from some big organs nearby which are connected with the intestine by little tubes. Juice is added from the pancreas, a large yellowish organ, while still another juice is poured in from the liver, a great dark red organ, through the gallbladder, which looks like a smaller, round, purplish plum.

With so many juices pouring over the food in the intestine, many changes are bound to occur. Parts of the food are completely dissolved by the juices, just as a lump of sugar dropped into a cup of coffee is dissolved. Then, at last, the part of the food that has gone through

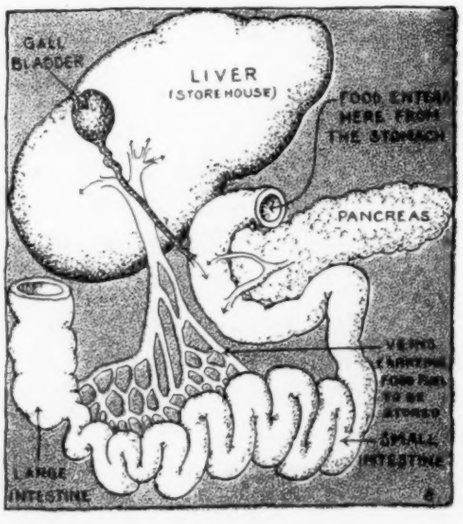
all these changes has something extremely important happen to it. It begins to pass out of the tube, not through any particular openings but by seeping through the walls of the tube, much the way water oozes through a piece of cloth.

It is easy to see that big pieces or even little bits of solid food simply could not get through this way. Only liquid can. That is why all the digesting, all the melting, absorbing and dissolving of solid food into liquid, has had to take place.

Jerry wanted to know where this liquid food would go after seeping through the walls of the intestine.

It goes into the blood. In the blood, the food is carried all around the body. It is needed to repair the cells that become worn out by work, just as your shoes become worn out when you have given them a great deal to do. It is needed also to help the many different parts of you carry on their many different jobs.

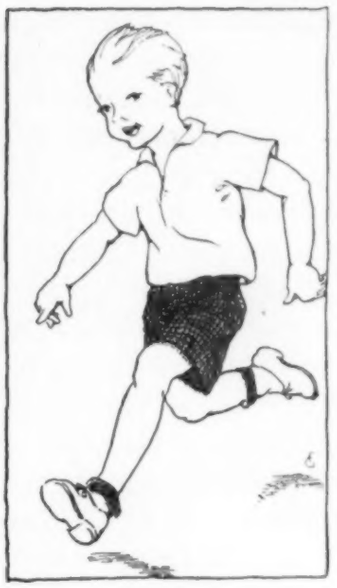
Food goes to your legs and feet and helps them run; it goes to your eyes and helps them see; it goes to your nose and helps it smell. Wherever there is work to be done, food serves as fuel, just as gasoline serves as fuel for an automobile and gives it power to work, or as coal serves as fuel for an engine and gives it power. Food is transformed so that it may furnish the sort of fluid that can be used to repair cells and to burn like fuel in the body.



Food travels from the stomach into the intestine, where it is made ready to meet the body's needs.

"My goodness," cried John, "does it burn in a big fiery flame inside of us?"

No, it doesn't burn in a big flame. Only tiny specks burn at a time here or there, in tiny explosions that cannot be seen or smelled in any way but that do give off power for working.



Food helps your legs and feet to run.

However, not all the food fuel needs to be used at once. Some of it, therefore, is stored for a while. The liver acts as a storehouse and keeps a supply of fuel on hand ready for use as it is needed.

Now you know that whenever fuel is burned, a waste part of it is left that does not burn. When wood burns in a fireplace, the ashes are left. Well, when food fuel is used, there are waste parts left also. These are no more good, and the body needs to get rid of them.

There are two chief ways of getting rid of them. You use both ways when you go to the toilet. One way is through urination and the other through bowel movements.

This waste is not the only kind, however, that is carried off in the bowel movements. In the bowel movements there is mostly a large amount of undigested and unused food.

To understand about this, you will have to think back a step or two. You will remember then that part of the food in the long, coiled intestine had been changed by digestive juices into a thin, watery liquid. You will remember too that thin liquid like this was the only thing that could pass through those walls because whatever went through had to ooze like water through a cloth.

Now, some of the food that reached the intestine was not changed sufficiently into liquid to ooze through those walls. It remained partly solid and undigested in the intestine. It was of no more use to the body. The body had to get rid of it. And so on it traveled down the twisted coils of the intestine until it emptied into a wider tube called the large intestine. Further on, this waste material went until at last it came to an opening called the rectum, and from there, in the bowel movements, it passed out.

Sometimes, when the bowels move, foods, like kernels of corn or bits of nut, are recognizable. That occurs when such bits have not been changed or digested by the juices. The teeth did not grind them sufficiently in the first place, and they passed down the esophagus through the stomach, through the intestines, into the large bowel and out without much changing.

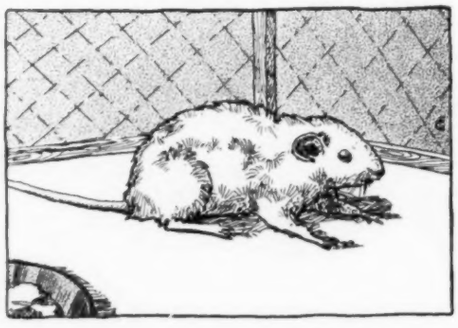
It is important to get rid of undigested food and other waste materials in order to keep healthy. Consequently, it is important to see that your bowels move every day. After breakfast in the morning is a good time.

The waste that passes out of the body when you urinate has been taken by the blood to two special filtering stations called kidneys. The kidneys lie above your hip bones, near your back, one on each side of you. They draw in and filter certain waste fluids from the blood. Then these fluids run down two thin tubes called ureters to a sort of balloon bag storage tank, called the bladder.

When the storage tank bladder gets full, the urine inside presses against a little door or valve, the valve opens and the urine runs out through a tube called the urethra.

In boys the urethra runs down the center of the penis, and its opening is easily seen. In girls the urethra opens between the legs near the top of the fold that is called the vulva.

And so the body gets rid of the waste material that is no longer useful. The good part of the food, however, it uses, as you know, to help it work and to repair worn-out cells.



This poor, scrawny, thin-haired rat was not given proper food.

Nevertheless, the body can use only a certain amount of food for work and repair, and it can store only a limited further amount in the liver. So, after that, if more good food is continually eaten and digested, a new storage place must be found. It is found under the skin; for the food turns into fat

and is stored in this form under the skin, and the person who eats too much grows rounder and chubbier.

Some children, however, do not have the right sort of food to eat. Poor things! They tire quickly and are fussy, and they whine and cry a great deal because they are tired. They do not grow properly either. They do not grow any better than white rats do when they are not given the right kind of food.

Once two white baby rats were put into two cages. One of the rats was given proper food, but the other one was not. Presently the one that was given proper food grew into a lively, sleek, silky, snow-white beauty with bright pink eyes, while the other remained scrawny and had hair that was thin, short, ugly and yellowish, and had eyes that were half closed and dull.

You need plenty of food and the proper kind of food if you expect to grow and be happy. You need six different kinds of food.

You need proteins, and you can get these especially in meat, eggs and milk.

You need carbohydrates, and you can get these in such things as potatoes, cereals and desserts.

You need minerals, and can get these by eating vegetables, such as spinach and carrots, or fruits, such as apples and berries. Milk helps you get these too.

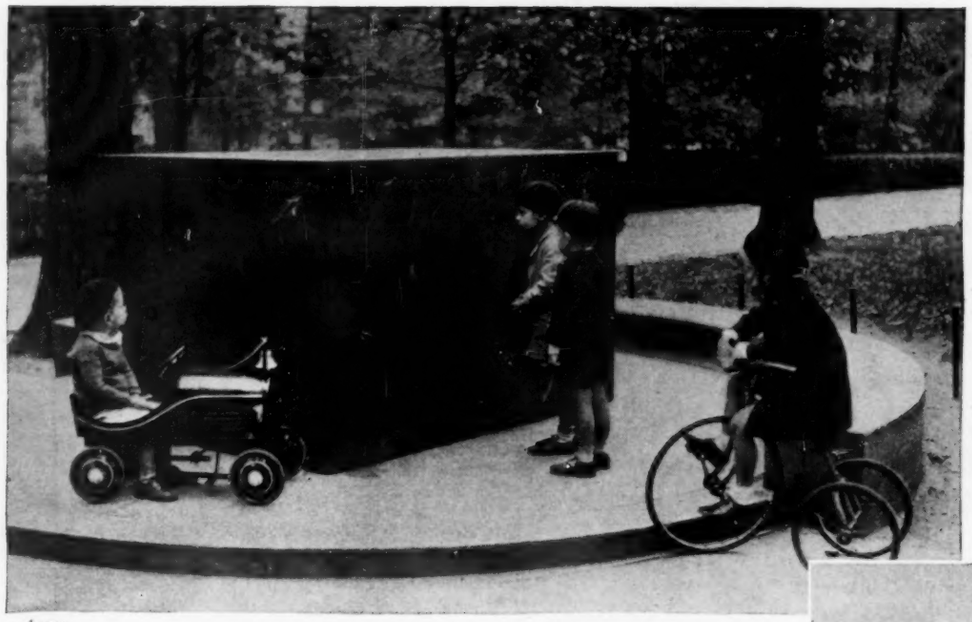
You need vitamins, which are found especially in fresh fruits and vegetables and in eggs and butter and cod liver oil.

You need some fats also, although not too many. You can get enough of these by drinking milk and taking just an ordinary amount of butter.

And last but not least, you need water, and plenty of it. And the best way to get plenty is to see that you drink at least four glasses a day.

The properly fed rat grew into a silky, snow-white beauty

(To be continued)



Acme

WHAT IS UNDER THE BOX?

An impish bronze goat which has amused large numbers of children of Philadelphia for years has been hidden under a green wooden box. This was done at the suggestion of the board of health to prevent possible transmission of the germs of infantile paralysis from one child to another.

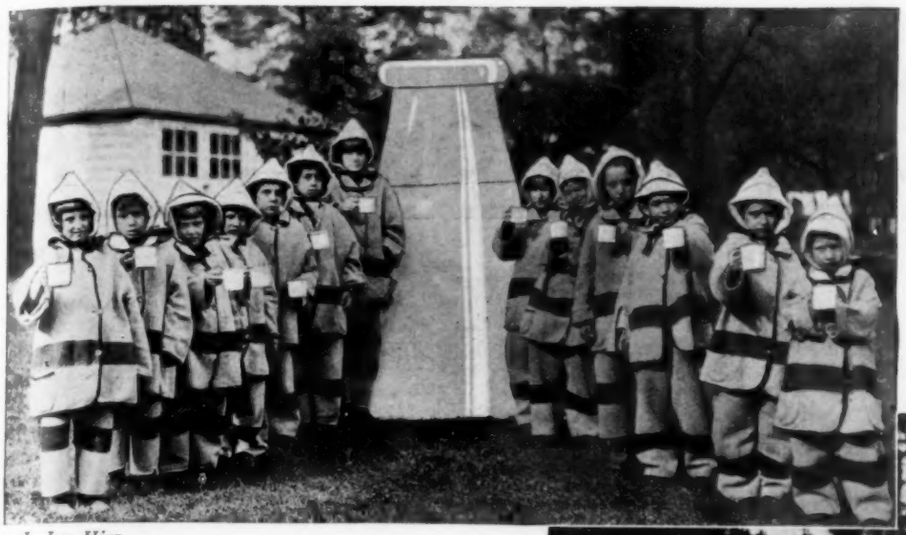
Acme

A pupil gives a classroom demonstration of cleanliness in a Russian school, and the ears come in for attention, too! To the right the children's "board of health" in an open-air kindergarten is shown operating a sanitation brigade—a daily inspection of hands.

This native of India has perfected what is probably the height of excellent balancing, for there is not a quack in a basketload.

Keystone View Company

Ewing Galloway



J. Jay Hirz

A class of tuberculous children in Schenectady, N. Y., pose with a symbol of milk—their best friend in the fight for health.

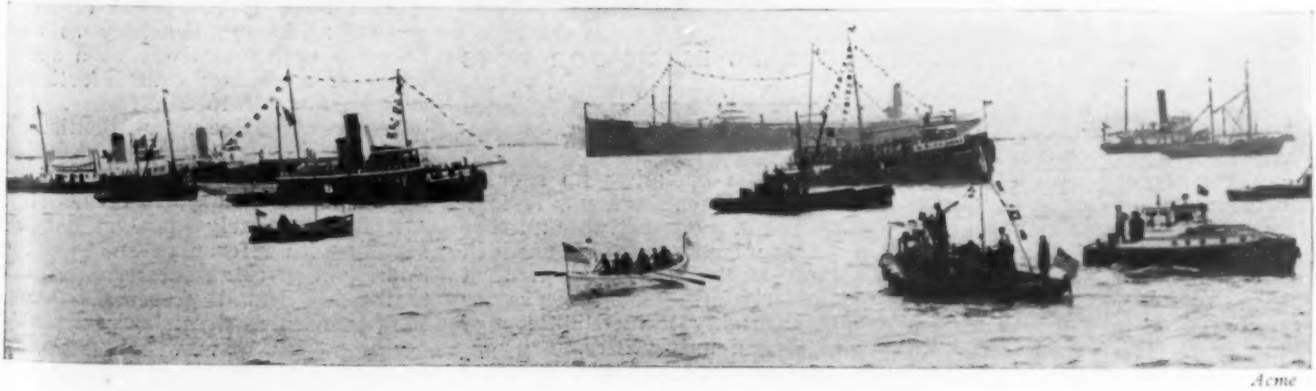
The flock of this Breton will supply many a holiday table with fine food.

William Thompson

William Thompson

Lettuce is grown under glass in the vicinity of Paris to supply the winter market.

The American crew of the S. S. *W. C. Teagle* crosses the line to win the seventh international lifeboat race at Brooklyn.



Acme

NEW BOOKS ON HEALTH

TO BE OR NOT TO BE

By Louis I. Dublin. Cloth. Price, $3.50. Pp. 443. New York: Harrison Smith and Robert Haas, 1933.

THE subject of suicide has a peculiarly morbid interest for every one. It is a reflection of our social order, since a considerable number of suicides must result from the battle between the individual and mankind in the mass. It is a reflection of our knowledge of the mind, because much has been written having to do with the motives which bring about suicide. It is concerned equally with health, because of available records of suicides resulting from despair over failure to recover from some chronic disease. At the basis of many suicides are problems of passion and of sex which modern psycho-analytic investigation has brought from hidden depths to public light. Hence the prevention of suicide is a problem which concerns the physician, the sociologist, the psychologist and the economist.

It is well to have such a scientific consideration of the subject as Dr. Dublin provides in this new book. He makes available statistics from every point of view relative to the reasons for self destruction, the number of cases, the methods used, and the relationship of economic, religious and marital conditions to this problem. He also provides a historical consideration as well as a discussion of the legal aspects of the relationship of suicide to insurance. This book is supplemented by a useful bibliography and by an excellent index, so that it is not flattery to describe it as the best book thus far made available on the subject it concerns.

MORRIS FISHBEIN, M.D.

CHILDREN'S SLEEP

By Samuel Renshaw, Vernon I. Miller and Dorothy P. Marquis. Cloth. Price, $2. Pp. 242. New York: The Macmillan Company, 1933.

THE title of this volume is hardly descriptive of its content, since it is really concerned with a series of studies on the influence of motion pictures and similar factors on children's sleep. The work not only describes the methods of study and a consideration of the nature of sleep but also some consideration of the aspects of loss of sleep and of the influence of coffee on the sleep of children. Interestingly enough the authors made a comparison between the effects of coffee and caffeine-free coffee on the sleep of children, and found that there was just as much motility during sleep among children that drank caffeine-free coffee as among those who took ordinary coffee. The evidence seems to establish the fact that coffee does not increase the movement in sleep to any considerable extent among some children.

However, the final conclusion of the authors on this subject is to point out the ridiculous fact that parents who strongly protest against their young children taking coffee between the hours of 6 and 9 p. m., nevertheless permit the children to attend motion pictures, the effect of which in disturbing sleep is far greater than that of coffee, and the influence of which is much more lasting.

M. F.

FOOTBALL PLAYS FOR BOYS

By Ralph Henry Barbour and La Mar Sarra. Cloth. Price, $1.25. Pp. 110. Brooklyn: D. Appleton-Century Company, 1933.

THIS little book has no specific health point of view. It is a collection of a considerable number of excellent plays to be used in football strategy and is planned particularly for younger boys rather than for highly trained athletes of colleges and universities.

M. F.

I GO NURSING

By Corinne Johnson Kern. Cloth. Price, $2.50. Pp. 256. New York: E. P. Dutton & Co., Inc., 1933.

THIS book, "dedicated to student nurse and graduate alike," holds vistas of prospect for the student and vistas of retrospect for the graduate, for into its pages is compressed a cross-section of nursing—four years in the life of the author.

Each chapter is a story in itself and deals with a separate case. Among the settings that form the bizarre pattern of the nurse's life are the exotically furnished home of a merchant in San Francisco's Chinatown; the cold, lonely reaches of a desolate Canadian mountain community; a musty, ramshackle farmhouse, and the filthy sanctuary of a crazed clairvoyant. The tales are told with simplicity and photographic accuracy yet with an artistic interpretation that finds beauty in the midst of stark realism, life in the sordid atmosphere of death. A human, sympathetic note sounds the overtone of each tale, for to this nurse the patient is not "just another case."

Although the stories are reminiscent of the days of willow plumes and Weber and Fields, nevertheless they are within the realm of experience, actual or possible, of every nurse. The book can add nothing to modern knowledge of nursing technic and skill; but it can prove an inspiration for gallant courage. It is further to be recommended for its literary merit and the beauty of its descriptive passages.

LEOLA J. HARRIS.

THE NEW DENTISTRY

By LeRoy Matthew Simpson Miner. Cloth. Price, $2. Pp. 219. Cambridge, Mass.: Harvard University Press, 1933.

THIS book is composed of five parts: history; dentistry as an art or a craft; dentistry as a specialty of medicine; oral infection, and a glance into the future. It describes the place which dentistry has held in times past, which it holds in the present and which it hopes to hold in days to come.

It is a scholarly piece of work, replete with references and quotations, and gives an interesting and thoroughly sound presentation of the place which dentistry occupies.

W. W. BAUER, M.D.

SCHOOL AND HEALTH

A Department Conducted by J. MACE ANDRESS, Ph.D.

67 Clyde Street, Newtonville, Mass.

Wit and Humor: New Source of Power in Health Education

IN THE great story of human evolution nobody knows the date or the occasion of man's first laughter. He is the only being who has ever laughed. No animal that we have ever known was capable of genuine laughter. It is a distinctly human characteristic. All peoples the world over enjoy wit, humor and laughter.

Many years ago I made a careful study of the Igorots, a savage people living in the northern part of the island of Luzon in the Philippine Islands. At that time they were actively engaged in head hunting although the government was undertaking to put a stop to the practice. Many an evening I lounged around their camp-fires. It was a place for fun making. There was the beating of tomtoms and the singing of songs. The songs were often impromptu and directed toward members of the group. Sometimes a savage would jump into the middle of the circle and through words and gesture would recite something that the other members of the group found highly entertaining and amusing.

Anthropologists find that the sense of humor varies, but all people laugh at something. What this will be varies among different people to such an extent that what is witty to one group will fall quite flat with another. For example, the Englishman is often accused of not seeing a joke, but this can scarcely be regarded as true when one realizes that the English have supported a publication like *Punch* for so many decades. The place of wit and humor in the movies, radio, books, newspapers and magazines indicates a powerful human interest.

To the student of biology and psychology it must be clear that wit and humor with their natural accompaniment, laughter, must have survival value. When it was reported to Carlyle that Margaret Fuller had said that she had decided to accept the universe, he remarked with a chuckle "Gad, she'd better." Here is a fundamental truth. It is necessary for every living thing to adapt or adjust itself to the world in which it lives, or die. The sense of humor involves a pleasantly toned consciousness and healthful physical condition that make for vitality. It is like shock absorbers to an automobile, thereby helping the organism to meet the bumps in life. It may be the Negro's remarkable sense of humor that has enabled him to survive slavery and the hardships of meeting the problems of civilization with a minimum of training. On the other hand the Indian, more stolid than the Negro and with little sense of humor, has never been able to thrive in slavery or to adjust himself well to civilization.

A sense of humor and laughter promote a healthy mind and body. They banish worry and morbid states of mind. Everyday science presents facts to prove this assertion. Dr. James J. Walsh, who is also an educator, has written an entire book on the healthful effects of laughter. He states that the diaphragm, which divides the thorax from the abdomen, is a strong muscle and that when a person laughs, the diaphragm moves up and down and massages the internal organs. Such a massage tends to stimulate digestion, circulation, breathing, the glands of internal secretion and the vital organs of the body. The researches conducted at the Harvard Medical School show that states of anxiety often register themselves in gastric ulcers. Investigations with the x-rays also show that pleasant affective states promote the process of digestion and that anger and fear have the opposite effect.

Courtesy of Ginn & Co.

A modern textbook on health for children uses this cartoon.

In the light of these facts, it is self evident that wit, humor and laughter should play a part in health education. This means a break with the past, a revolution. Many readers will recall school days of long ago when anything in the schoolroom that bordered on jokes and laughter was regarded as a deadly sin. As memory carries one over the years, one may easily review the melancholy faces of the teachers and recall the formal, dull textbooks which school children were compelled to study. Truly there was not a laugh in a carload.

Within recent years the grim atmosphere of the schoolroom has become much softened. Under the leadership of men like John Dewey and others, educators are beginning to think more and more of education as a natural process. The teacher and pupils learn how to live together and solve problems. They initiate and carry out interesting projects. There is freedom of discussion. In such a school there is a proper place for wholesome fun, the spirit of laughter and satisfying work. The teacher who has a sense of humor and appreciates it in her pupils has powerful resources at her command. If they are properly used, they will lead to the forming of wholesome attitudes on the part of her pupils, who will tend to like their teacher and their school. Her classroom will be a happy place in which to live and work.

Wit and humor may be cultivated if they are given a chance for expression. They are valuable both as a means and as an end. I have already noted their importance to the individual who acquires them. In addition the teacher may use them to make points clear to her pupils and to encourage the retention of facts. Every one can recall certain incidents vividly because they were associated with something humorous.

The educational value of wit and humor has been recognized by advertisers for some time. Departments of health have found cartoons invaluable in their health education work. Humor is especially needed in health education

because the subject matter too frequently suggests fear and that which is morbid.

The school textbook is the last field to lend itself to the spirit of wit, humor and laughter. It is still largely an undiscovered opportunity to the makers of textbooks, yet textbooks are beginning to reflect this new spirit. For example, I have before me a book, entitled, "A Laboratory Manual of General Chemistry." Who would expect to get a laugh out of such a book? Yet there is a mild bit of humor running throughout this manual. It helps the student to remember and enjoy. School textbooks on health are just beginning to appreciate the humorous aspects of life. A great theatrical manager once said that every laugh in a play was worth a thousand dollars. He was looking at it purely from the monetary point of view. A wholesome laugh is probably worth much more in terms of health and education.

Although wit and humor may be sources of power to the teacher, they need to be used with caution. They should be used in their proper place. Teachers should not pose as clowns or allow their pupils to do so. Jokes may be used to help make a point or to enliven what would otherwise be a dull presentation. The kind of wit and humor that savors of irony and seeks to ridicule or belittle others should be avoided. The wise teacher is one who laughs with her pupils and not at them.

TEACHING HEALTH

(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)

AN EXPERIMENT IN HEALTH TEACHING

FOR the last two years I have attempted to interest the children of my fourth year classes in a program that would bring those who were below standard up to normal health. The results of a rat experiment and of my observation in the schoolroom have convinced me of the necessity of such a program. The rat experiment that I watched was carried on at Cornell University to show the bad effects of vitamin deficiencies in the diet. The most impressive part of the experiment was the recovery of the rats to a normal state when they were given proper food. I was eager to discover whether a health program would correct cases of malnutrition and prevent colds and other forms of illness which were evident in my classes among the children of the rich as well as of the poor.

The program was started by a description of the rat experiment which I had observed. Questions naturally followed concerning foods that contained different vitamins. Each type of food was given special attention, and a careful check was made to find how many in the class were including that type in their daily diet. For several weeks the health period was spent in the discussion of milk. It was explained that an excellent source of vitamin A is milk and its products. Each child was questioned as to the amount of milk he was drinking and as to the quantity that his family was buying. To find the required amount the children counted the members of their families and allowed 1 quart for each person under 18 and 1 pint for each one over 18. Many were buying but one fifth of the required amount. In such cases the children urged their parents to buy more milk. Each morning for several weeks the increased amounts were noted. Foods were suggested that might be prepared from milk; these included puddings, custards, ice cream, cocoa and milk shakes. A list of the best sources of vitamin A was placed on the board to include milk, butter, cream, cheese, eggs, fruits (especially yellow), vegetables (especially yellow and green) and cod liver oil. It was explained that milk and eggs contain less vitamin A in winter because cows and chickens are fed differently then. Therefore a substitute, such as cod liver oil, is necessary.

The class talked about vitamins B, C and D in much the same way as vitamin A. The best sources of vitamin B were listed as whole grains, for this vitamin is found in the dark covering of the grain kernel. The use of entire bran was discouraged because of the grain kernel. A list on the board included whole wheat bread, whole breakfast cereals and brown rice. The two classes of foods containing vitamin C were uncooked fruits and vegetables. It was explained that cooking has a tendency to destroy this vitamin. Many in the class knew that vitamin D is called the sunshine vitamin and were able to tell why some substitute such as cod liver oil is needed during the winter months. The vitamin D list included sunshine, cod liver oil or its equivalent, egg yolk and liver.

The class also discussed the use of minerals in the body, such as iron, calcium and phosphorus. Iron was given much attention as it is necessary not only to the blood but to the body tissues as well. The best sources of iron included meat (especially beef and liver), oysters, potatoes, spinach, swiss chard, lettuce, raisins, figs, apricots, prunes, eggs, molasses and whole wheat bread. Various desserts were suggested, such as gingerbread, dark fruit cake, steamed or apricot pudding, molasses cookies with fig or raisin fillings, and prune whip. Calcium and phosphorus were called the bone and teeth builders. It was noted that the foods containing large amounts of calcium were milk and orange juice, while the foods that contained phosphorus, which is also a tissue builder, were milk, meat and eggs. The children learned that calcium, in order to complete its work, needs the helpers vitamin D and phosphorus.

The roughage and carbohydrate or energy producing foods were generalized to cover plant foods such as vegetables, fruits and grains.

The protein or tissue building and repair foods included meat, milk and eggs.

At this time correct breakfast menus were made up contrasting the coffee and doughnut breakfast with one containing proper foods. Menus were placed on the board so that choices might be made to include fruit, whole cereal or whole wheat toast, egg and milk. These were followed by proper luncheon and dinner menus.

The importance of outdoor activity and of a rest period during the day was emphasized.

Toward the end of the first term the class was ready to make a daily program that would include exercise, rest, and the minimum amount of food necessary for body requirements. It was explained that if extra amounts were desired they should be chosen from the plant foods, as they were more easily digested. The program covered the following points: (1) from 1 to 3 teaspoonfuls of cod liver oil or substitute from September to May, (2) 4 glasses of milk, (3) 1 serving of

meat, fish or fowl, (4) 1 potato, (5) 2 vegetables (one uncooked), (6) 2 fruits (one other beside uncooked citrous fruit), (7) 1 egg, (8) 2 or 3 pats of butter, (9) 2 or 3 slices of whole wheat bread or whole cereal substitute, (10) 6 glasses of water, (11) at least two hours of outdoor activity, (12) from one-half to one hour of rest before dinner, and (13) from eleven to eleven and one-half hours of sleep with open windows.

The children kept health notebooks and checked this list each morning for the previous day. At the end of the second week a star was given to those who had a perfect record with no absence or illness.

The parents of one class were invited to school to listen to an explanation of the program, after which there was an open discussion. It was thought better to let food suggestions come from the children instead of from the parents.

In another group a weight record was taken at the end of every month to see whether proper gain had been made. Many times the children were able to determine the reasons for their failure to gain.

It was extremely interesting to watch the health improvement among many of the children.

While this program cannot be considered infallible, it has given the children a health consciousness and proved itself a valuable guide toward a higher physical standard.

RUTH PATTERSON LENGFELD,
Syracuse, N. Y.

PLAYING DENTIST

DENTAL education is only too frequently limited to a dogmatic presentation of facts in which the teacher finds it difficult to interest the children. This subject can be made interesting to the child if he is allowed to combine it with his natural desire to play and to enjoy actual participation in making and carrying out the plans.

The third grade recently found enjoyment in conducting a dental clinic and playing dentist. The project was started in health class by reading and discussion on the subject of teeth. After sufficient information had been gained, some one suggested playing dentist. But how could children play dentist without the regulation chair and other office equipment? By this time the class was full of suggestions, some good and some bad from a workable standpoint. Finally the pupils decided on the best suggestions and every one went home with a particular piece of work in mind to be accomplished over the week-end.

Monday came and with it a report that the chair made at home had provided so much fun that it was worn out and needed repair. This was to be done by the children in the neighborhood that day after school.

The dental chair arrived on Tuesday, but it was without the padded head rest. That was a hard job. The chair consisted of an old, discarded chair seat and back securely nailed to an up-ended fruit box. This gave proper height but no foot rest. Another box about 15 inches square was nailed to the lower part of the fruit box with the appropriate extension for comfort.

The instruments may have seemed crude to the adult but were most adequate for the child. In fact, they were so completely adequate that one dentist could use them for one operation while another dentist could use them for an entirely different type of operation, and the patients in both cases recovered beautifully! We were able to secure a few "tooth pickers," as the children called them, from the school dental clinic, but for the most part the instruments were entirely make-believe.

A lath nailed to the top of a high jump borrowed from the gymnasium provided the framework for a drill. A string with an automatic pencil attached completed that piece of apparatus, which even made a whirring noise when operated by an energetic and auditory-minded dentist. Wash basins and pans were conveniently placed on the table for dentists and nurses, who washed before attending a patient. A sterilizer was made of a wooden box, and a lid was fastened on with hinges made from a belt.

Towels consisted of any white, clean material. Many pupils brought little salt sacks; other towels were of linen. The only qualification was that they had to be clean.

A table and chair were provided for the waiting-room. The type of reading material to be provided for the waiting patients was discussed when planning for this phase of the clinic. A good lesson in mental health developed, and a talk with the library teacher concerning the best kinds of reading material created a great amount of interest. One child said that he wanted materials to keep the patients from being worried. The reading matter that the children brought in showed that they really understood the meaning of good literature.

When all the preparations were complete, a dentist, a nurse and a patient were chosen by the class to work in the clinic. The class acted in a critical capacity, and even the patient had opportunities to correct the dentist occasionally. Some patients came in with most severe cases of toothache while others came merely because six months had passed since the last dental examination.

The advice given by the dentist to the patient was most interesting. All the health rules were discussed in various ways, and those pertaining to dental work were especially emphasized. The dentist told one patient who showed signs of malnutrition that she should go to bed earlier so that her rest and food would do her good.

This project served as a good review of all the health habits, lent itself to correlation with other subjects, such as reading, and resulted in greater knowledge concerning the care of the teeth and better attitudes toward securing both preventive and corrective dental care.

GREBA LOGAN,
Portland, Ore.

PLAYING DOCTOR AND NURSE

RECENTLY in a rural school in which I taught, we carried on an experiment in student government. A doctor and nurse were two of the members of the governing staff. The doctor's duties consisted of bandaging any wounds which occurred on the playground and of giving health talks at the morning assemblies. The nurse checked up each morning on cleanliness of hair, face, teeth, hands and finger nails; she also checked on the amount of sleep each child had, whether or not he had eaten a hot cereal for breakfast and whether or not he had drunk at least six glasses of water the day before. Since no officer

could hold the same office longer than one month, most of the boys and girls had their turn at playing doctor and nurse.

Each child could make his office as important or as unimportant as he wished. We had one doctor who used posters to emphasize

his health talks. Another doctor directed a good health play which he gave at a meeting of the Good English Club after getting the consent of the president.

Needless to say, the children were enthusiastic about this method of health training, and I am sure they will carry over into adult life many habits established that year.

ZELDA M. PORTER,
Boulder, Colo.

NEW HEALTH BOOKS AND TEACHERS' MATERIALS

IT IS the business of the teacher to arrange situations so that pupils may learn effectively with the least expenditure of time and energy. The teacher guides the learning process. Unless the pupils learn, no teaching takes place. Dr. Book has rendered a distinct service to teachers by bringing together the facts gathered by the experimental studies of learning during the last thirty-five years. In "Economy and Technique of Learning," [1] there is little about the teaching of hygiene, for the book is devoted to the general principles of learning and teaching; but since it concerns itself with habit formation, emotional control and other things of vital interest to the health educator, it may be referred to with profit by all students of health education. The use of this book as a textbook presupposes that the student has had an introductory course in psychology.

ALTHOUGH modern science has done much to save life, it is also true that it is responsible for great loss of life. The machine age is a dangerous age. In all the wars in which our country has been engaged the Americans who were killed in action or who died of wounds numbered about 300,000; but during the last fifteen years, a period of time approximating the duration of our six major wars, 325,000 Americans have been killed in automobile accidents or have died from injuries resulting from such accidents.

By such figures in "They Call Us Civilized" [2] the Travelers Insurance Company of Hartford, Conn., drives home the terrific losses from automobile accidents. Striking graphs and illustrations help to make this publication interesting and instructive. It informs the reader how a car may be run with the maximum of economy and safety. This publication might be used effectively in classes in health or civics.

THE WAR against tuberculosis is one of the most brilliant achievements of modern medicine. Instead of being the leading cause of death, tuberculosis has now fallen to seventh place. Nevertheless, it is also true that it leads as a cause of death in the age groups between 15 and 45. These facts still entitle it to a significant place in the health education program, particularly in the secondary school. Keenly sensitive to the modern needs of the secondary schools, Jean Latimer, active educational secretary of the Massachusetts Tuberculosis League, has prepared some valuable material for high school teachers, "A Suggested Teaching Unit for Secondary Schools on Tuberculosis and Its Prevention." [3] It lacks the morbid atmosphere of much of the material on tuberculosis and is thoroughly sound and helpful. Frequent reference is made to health heroes in developing the germ theory of disease. In stressing civic or community responsibility toward tuberculosis an appeal is made to the idealism of youth. Instead of emphasizing many factual details an attempt is made to develop fundamental concepts concerning tuberculosis. There is an excellent bibliography.

THE EDITOR of the School and Health Department of HYGEIA, who is also the editor of *Understanding The Child*, and the assistant director of health education in the New York City public schools present to grade teachers "Broadcasting Health," [4] a pioneer text for children on the subject of food and nutrition. It offers a year's course in the upper grades of the elementary school. In story form it describes the activities of a modern school where the children helped to clean up and organize a school lunchroom, keep a health bulletin board and health notebook, run a newspaper and make field trips. Most of the chapters are broadcasts given by the children in the "Work Together Room."

"Broadcasting Health" is generously illustrated. Nearly every illustration is accompanied by questions designed to stimulate the pupils to read or reread the text. The many cartoons will appeal to children's sense of humor. Much of the content of this volume is new to children and covers the problems of food and nutrition in a broad way. There is a good deal of correlation with geography, history and general science. Professor Andress and Dr. Goldberger believe in using scientific terms that are regularly employed in general conversation and over the radio, such as calories and vitamins. These terms are carefully defined either in the body of the text or in the glossary at the end of the book.

The text carefully avoids using direct commands such as "Do this" or "Remember that." The plan is to make the activities in the book so intriguing that both teachers and pupils who use the book will be eager to try out some of the activities suggested.

AMONG the notable discoveries in nutrition are those which have to do with the vitamins. Within the few pages of "The Pursuit of the Vitamins" [5] the author tells with brevity and clarity the story of scientific research in this field. The illustrations are unusual, and the style is attractive. Teachers will be especially interested in the review questions on the last page.

LIKE all the other valuable booklets on health, issued by the Metropolitan Life Insurance Company, "Milk: An All-Round Food," [6] is one that every teacher should have. It tells about the value of milk and dairy products in the diet and about the home care of milk.

ALL teachers find pageants, poems and stories valuable in depicting health truths. Mary G. Matheson, educational secretary of the Tuberculosis and Health Society of Detroit and Wayne County, has collected with care some of the best selections from current health literature and brought them together in the attractive booklet, "Health In Drama, Verse and Song." [7] Teachers will find it useful.

THE COMPLAINT that suitable health material is not available for children is no longer applicable today, as is evident when one opens this attractive new series of health books, "The New Healthy Living Series: The Game of Healthy Living; The Habits of Healthy Living; The Laws of Healthy Living; The Healthy Community." [8] They are carefully organized to fit grades 6, 7, 8 and 9. The subject matter in the four books covers the fundamentals of health that children should acquire. At the end of each chapter there are excellent problems for the pupils to solve. Their solution requires the application of the facts previously learned.

1. By Book, William F., Price, $2. Pp. 534. Boston: D. C. Heath & Co., 1933.
2. Pp. 59, Hartford, Conn.: The Travelers Insurance Company, 1933.
3. By Latimer, Jean V. Pp. 31. Massachusetts Tuberculosis League, 1933.
4. By Andress, J. Mace, Ph.D., and Goldberger, I. H., M.D. Price, 80 cents. Pp. 400. Boston: Ginn and Company, 1933.
5. By Mann, Paul B. Pp. 16. New York: General Baking Company, 1933.
6. Pp. 8. New York: Metropolitan Life Insurance Company, 1933.
7. Pp. 80. Matheson, Mary G. Detroit: The Tuberculosis and Health Society of Detroit and Wayne County, 1933.
8. By Winslow, Charles-Edward Armory, Dr. P. H., and Hahn, Mary L. New York: Charles E. Merrill Company, 1932.

QUESTIONS AND ANSWERS

Bee Stings

To the Editor:—Last year I suddenly became sensitive to bee stings. I was stung on the knee and within two or three minutes had what I understand is known as an anaphylactic reaction. I became swollen; my lips thickened; I could not speak, my heart pounded; I was extremely nauseated, and my throat closed so that I could not breathe. As a result I became unconscious. When I recovered I was apparently all right. This year I was stung by a hornet and went about for twenty-four hours without any trouble. At the end of that time I fainted, had great difficulty in breathing and suffered a nervous reaction. Will I again gain immunity to bee stings?

W. A. T., Massachusetts.

Answer.—The sting of the bee and other insects may affect a human being in the following ways: The pain itself may cause a serious reaction in a person with heart trouble. Some persons may suffer from bee sting more acutely than others because of allergy or hypersensitiveness either to the pollen which is injected with the stinger or to the bee venom itself. The symptoms from either or both causes may be those described by the inquirer or those of hay fever with lacrymation, sneezing and air hunger. Symptoms may appear as hives, localized or generalized swellings, and perhaps unconsciousness.

Deaths from apipuncture are not infrequent. The vital statistics of most states do not at present classify bee sting mortality separately; hence little is known of its comparative frequency, except from its mention in newspapers and occasionally in medical literature. One state, however, records three deaths and another two from this cause.

The treatment for allergic apipuncture divides itself into remedial and preventive. One who knows himself to be allergic, or hypersensitive, to bee sting would do well to carry with him whenever exposed to contact with bees some ampules of epinephrine solution together with a mounted sterile hypodermic outfit, which is obtainable in a metal case the size of a fountain pen. Only a few seconds are required to break the tip off an ampule and inject its contents into any reasonably clean portion of the arm. This should be done immediately after being stung.

Preventive treatment gradually decreases the abnormal sensitivity which is the fundamental cause of severe reactions. This is a more complicated procedure. Most cities today have medical specialists in the treatment of allergy. Most persons who find themselves hypersensitive to bee sting are also hypersensitive to other things as well, such as various foods and pollens. Such sensitivity usually runs in families and may exhibit itself as asthma, hay fever, hives, eczema or sick headaches. It is possible today to determine by means of skin tests to what foods, pollens and other allergens one is sensitive. These tests should, of course, include one containing an extract of bee venom. Any foods to which the patient exhibits a hypersensitiveness should first of all be eliminated from his diet. Food sensitivity may in reality be at the bottom of his bee sting sensitivity. One can be desensitized to the reacting pollens and to bee venom by graduated doses of each. After such a course of treatment it is entirely probable that one's hypersensitivity to bee sting will disappear. What one has considered a calamity may prove a blessing in disguise because of the improved health which will follow the corrected diet indicated by this thorough study of one's individual requirements.

Changing Intestinal Flora

To the Editor:—Do you recommend Bacillus acidophilus in changing intestinal flora?

L. B., California.

Answer.—Changing the intestinal flora has been exceedingly overstressed as a therapeutic procedure. A recommendation for changing the intestinal flora by any method could not be given without observation of the patient. This matter must be settled by a doctor who has a personal knowledge and understanding of the case.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Iodized Salt

To the Editor:—Is iodized salt beneficial to a thyroid gland that is more inactive than it should be? No other medicine is being taken at the time.

I. R., Tennessee.

Answer.—The use of iodized salt in adolescents usually prevents simple goiter. It should not be used to treat a thyroid gland which is exaggerated or defective in its functions. Such deviations from normal in thyroid function require medical treatment and cannot be benefited by the taking of iodized salt.

Beer

To the Editor:—Is 3.2 per cent beer intoxicating for adults? For children? What conditions may result in children or youth from its overuse? What is the alcoholic threshold in percentage for average people? For children? Why is beer recommended to certain people? What is its value?

C. R. J., Pennsylvania.

Answer.—Any alcoholic beverage may be intoxicating to individuals who partake of enough of it or who are exceptionally susceptible to the use of alcohol. This applies equally to adults and to children.

Typical analysis of the composition of beer in addition to the 3.2 per cent of alcohol shows that it may be expected to contain an average of 10 per cent of food materials, having a caloric value of approximately the same as that of sugars, protein and dextrin; namely, 4 calories for each gram. This would make a quart of beer equal to about 500 calories or about five-sixths the caloric value of a quart of milk. It is easy to see, therefore, that adding beer to a regular diet will have a distinctly fattening effect, and experienced persons readily recognize that in most instances those who drink beer have an adequate diet exclusive of the beer.

Beer should not be given to children, because it is a bulky substance which will discourage them from the taking of a balanced diet which they need. As long as the world is full of good food, there is no excuse for substituting beer for a balanced diet.

The alcoholic threshold for average persons cannot be stated because it varies with every individual.

All nutritional values contained in beer are available in other foods.

Humidifiers

To the Editor:—I should like to know on what basis, if any, the advertisements concerning the beneficial effects of humidifiers in the small home are justified. A recent advertisement reads: "Colds become unknown! The healthful humidity supplied by our humidifier eliminates most of winter's many illnesses." Reference is made to the danger of dry air to the skin and hair. Is there real experimental evidence to support these claims? What relative humidity in the home is necessary to provide the best living conditions and how should this be attained?

C. L. W., New Hampshire.

Answer.—The advertisements of humidifying devices, like those of other merchandise, are almost invariably overdrawn. The evidence in favor of home humidification in winter in northern climatic conditions is not of a strictly scientific nature. It is not experimental in character and confirmed by careful controls. It comes rather into the general category of clinical observation, much of which is accurate but some of which may later be superseded.

Respiratory troubles are more common in winter because the air is drier. Therefore, many doctors argue, the common cold is favored by the dry and congested respiratory passages, resulting from lack of moisture in the air. But many other conditions of living are different in winter. For one thing we live closer together and infection from one person to another is easier. Consequently this argument is not conclusive.

Under conditions of low relative humidity, particularly with high temperature, the perspiration (invisible under such conditions) is evaporated rapidly, with consequent cooling of the skin. The body reacts by withdrawing blood from external areas. A person feels chilly, is inclined to raise the surrounding temperature and turns on more heat in the house. Many people keep their houses at 75 and even 80 F. in winter, thereby still further reducing the relative humidity and increasing the drying effect on the skin and the mucous membrane of the respiratory tracts. It seems reasonable that this condition is not the most healthful, although the adaptability of the human machine is such that many persons do not see any ill effects from this "unnatural" condition.

It seems reasonable to advocate for our northern houses in cold weather as high a humidity as can reasonably be provided and as low a temperature in the house as the occupants will permit. Many books advocate a relative humidity of 60 per cent or so, which is the standard of a nice May day. But this standard is not realizable in zero weather, even with double windows. Condensation produces steaming windows and frost in closets and attics. Something like 40 per cent is, however, generally attainable. As to temperature, it is a matter of habit. If people will begin in the fall by watching carefully that the temperature of their houses does not rise above 65 F. or at most 68 or 70 F., they will soon find this comfortable.

As to the attainment of the humidity that is advocated, every house seems a special problem. This is because air leakage varies enormously. Something may be learned from the articles in HYGEIA of January, 1926, and January, 1931. Large quantities of water need to be evaporated. How to do this most cheaply and conveniently is the problem. Since conditions vary and so much of the advertising is exaggerated, it is best that purchasers of humidifiers secure a written guarantee and pay only when satisfied by test.

Reducing

To the Editor:—Information is desired on the subject of reducing.

L. S., Illinois.

Answer.—Overweight is due to a disproportion between food intake and energy output, to organic disease or to a combination of the two conditions. If it is due to disease, medical treatment is necessary. If it is due to faulty diet, medical examination is necessary in order first to assure the patient that no organic disease exists and then to give the proper advice about diet, exercise and hygiene.

Assuming that no disease exists, as shown by the examination, it then becomes a question of eating less than the body needs for a while, so that the excess food formerly taken and now stored as fat may be utilized. This must be done in a way that will not injure the health. Unbalancing the diet, as in the Hollywood diet so popular a few years ago, may result in disaster. Reducing too fast must be avoided. Drugs that take off weight are effective but dangerous. Many advertised reducing systems contain these dangerous drugs. Materials to rub on the skin or to put in the bath for reducing are fakes, one and all; they will not reduce; neither will vibrators, rollers nor any of the numerous devices designed for fooling the fat.

Local reducing, as, for example, of the waist, the hips or the breasts, cannot be accomplished except as part of a general reduction in weight or in some cases by correcting organic disease, which is a medical problem.

There are many food fads now being urged on the public. These are all either worthless or harmful; many are designed for the purpose of selling perfectly ordinary foodstuffs at many times the prices they ought to bring.

Oxidation

To the Editor:—In a biology textbook the following statement occurs: "The plasma contains digested sugars, fats, amino-acids and mineral salts." Although iron rusts when exposed to air, it was found on experimenting that sugars and fats did not. What is there in the body that enables sugars and fats to oxidize readily?

M. O., New York.

Answer.—The example of the rusting of iron and oxidation of other metals was not intended to convey the idea that the processes occurring in the metabolism of the body are just like those present in oxidation, although in general the chemical changes taking place in the body are of the nature of oxidation changes; that is, oxygen taken in from the blood to the tissues combines with the chemical material in the tissues, liberating carbon dioxide as a waste product.

As to the intermediate stages, which are vast in number, they are the subject of study of the physiologic and biologic chemist. A great deal has been learned about these changes in the last few years, but the number of processes which have come to be fully understood is relatively small in contrast with the enormous number of chemical substances which are being formed and broken down in the body all the time.

The fact that the simple combination of oxygen with various substances outside of the body requires a high degree of heat does not imply that the chemical changes taking place in the body require a similar degree of temperature. The body cells are endowed with the capacity to bring about chemical changes of that sort. It is quite true that the more or less complicated food substances which one takes into the body are changed with the production of sugars, fats, the amino-acids and many other such products. The reason for these changes and the manner in which they occur constitute the domain of physiology. When the physiologist and the physiologic chemist understand them completely, they will have solved in large part the phenomena of life.

Safe, Powerful Antiseptic

Doesn't sting in open wounds

YOU will feel safer when you have in your own home the powerful antiseptic that great modern hospitals use!

An antiseptic that bears the Seal of Acceptance of the Council on Pharmacy and Chemistry of the American Medical Association—Hexylresorcinol Solution S. T. 37 (1:1000).

This antiseptic has a germ-destroying power greater than carbolic acid in any usable solution. Yet a small child can swallow it accidentally without harm.

Even when poured full strength into open wounds, it does not sting or burn. And it spreads more rapidly and penetrates more deeply than many other antiseptics into the crevices of wound tissue.

Use it at once for cuts, scratches, open wounds—and teach your children to use it freely. In case of serious injury, of course, consult your physician.

And you'll be glad to know it's economical to buy. The 50¢ bottle is now a whole ⅔ bigger than before. And you get the large size for only $1.00 instead of $1.25. Prices are slightly higher in Canada. Buy a bottle today at your druggist.

Among the prominent hospitals using Hexylresorcinol Solution S. T. 37 are:

The Woman's Hospital of Baltimore
Washington, D. C., Emergency Hospital
New England Medical Center, Boston
New York Infirmary for Women and Children
Episcopal Eye, Ear and Throat Hospital, Washington, D. C.
The Pittsburgh Hospital, Pittsburgh, Pa.
Grace Hospital, Detroit
Grace Hospital, New Haven, Conn.

HEXYLRESORCINOL SOLUTION S.T.37
LIQUOR HEXYLRESORCINOLIS 1:1000
12 FLUID OUNCES
S & D
HEXYLRESORCINOL SOLUTION S.T.37
DIRECTIONS
Use in nose or throat after exposure or when there is irritation.
MOUTH WASH, GARGLE OR THROAT SPRAY: Use full strength or dilute with one to three parts of warm water. Odorless, pleasant to taste. Use twice daily.
NASAL SPRAY: Dilute with three parts of warm water.
CUTS, BURNS, SCALDS, ALL RAW SURFACES: Apply undiluted. If injury is painful, bandage lightly, keeping bandage wet with solution.
DENTAL USES: The use of Hexylresorcinol Solution S. T. 37 after each brushing of the teeth is recommended.
PRICE $1.00
SHARP & DOHME
BALTIMORE PHILADELPHIA

Great hospitals use it— Use it in your own home

HEXYLRESORCINOL SOLUTION S. T. 37
Made by **SHARP & DOHME**

ACCEPTED AMERICAN MEDICAL ASSN Council on Pharmacy and Chemistry

The Anemia Mystery

It may be the beginning of one of Nature's mysteries which can be solved only by the painstaking investigation of a physician.

WHEN, without apparent reason, someone you care for—young or old—complains of feeling tired or exhausted and begins to lose color, becoming paler and weaker as the days go by, you may have good cause to suspect some form of anemia.

The anemic person lacks good red blood.

Sometimes anemia is a symptom of a condition which is unknown or neglected by the sufferer and which may be either slight or serious. A frequent, though small, loss of blood, a wasting disease, or infections in the body may produce anemia. If, however, the cause is diligently searched for—and can be removed or corrected—the anemia will usually disappear under proper treatment.

Anemia may also be caused by a lack in the diet of certain food elements necessary for normal blood formation—especially when there are associated functional defects (often symptomless) of the stomach and intestines. A correct diet alone sometimes conquers such anemia. But proper treatment with an appropriate quantity and quality of iron is often of fundamental importance in producing a sufficient amount of blood coloring matter.

People may also become anemic because they are unable to utilize from an adequate diet the food material necessary to make red corpuscles. This may be dependent upon a deficiency in the function of the digestive organs. The most common type of such anemia is called by doctors Pernicious Anemia. Until recently it was always fatal. In 1926, however, an incredibly simple remedy was found—liver.

Pernicious Anemia can now be kept under control by the regular use of liver or an effective substitute PROVIDED A PROPER AMOUNT IS PRESCRIBED FROM TIME TO TIME FOR EACH INDIVIDUAL CASE. But—liver or potent substitutes are not a panacea for all forms of anemia. Although they save lives in cases of pernicious and allied anemia, they are frequently ineffective in treating ordinary forms of the condition.

If there is an anemia mystery in your family, don't guess about it. Ask your doctor to find the solution.

METROPOLITAN LIFE INSURANCE COMPANY

FREDERICK H. ECKER, PRESIDENT ONE MADISON AVE., NEW YORK, N.Y.

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TRAINING FOR ATHLETICS AND HEALTH

(Continued from page 986)

For days that young man reported for practice, and repeatedly the coach assigned him the same task of passing at the circle on the fence.

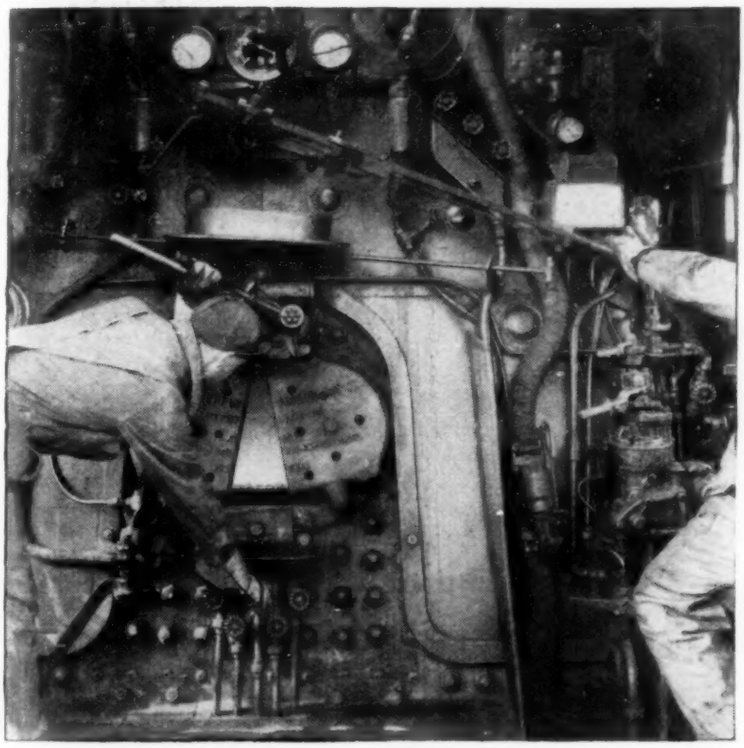
During his first year at college this center-aspirant did not make the team, but the second season the coach found him back again, trying harder than ever. That year he began to get into games. Toward the end of that season he was a regular, and the backfield men who played behind him said they never had seen a center who could pass so accurately. This clumsy lad, whose total stock in trade was persistence, became one of the greatest centers of the country. Had he not stuck to the special training of the muscles necessary in passing a ball accurately, he would never have made more than the fourth team, if that.

Now it may be that you are especially anxious to be a football player some day, but you are afraid your hopes will never be fulfilled because you are too small. Football, as it is played today, is more of a game of brains and speed than it ever was before. Many a small player has succeeded at this game. If you are small, determine that you will work hard to build your health, your muscles and your speed. Who knows but that you, too, may get your chance! One of the most elusive and trickiest backfield men who ever played on a college gridiron was a man called "Tut," who was so small you had to look hard to see him emerging from a pile-up. But he always came up smiling. His smallness was to his advantage, for many a big tackler has felt quite foolish when, sure that he had tackled "Tut," he found that he had tackled empty air and that this tricky little runner was reeling off several more yards for his team. Though he was small, his muscles were hard and strong, and he was fast and shifty on his feet. It is not for you to say that you will never be a football player, until you have honestly tried to develop yourself for the game.

When you do make a football team, the coach will require that you adhere closely to the rules of training as presented in this chapter. There is one more fact you should know. On the day of a football game you will be especially restricted in your diet. To go into a football game after having eaten a heavy meal is foolish. The body cannot give its best in muscle power and nervous control when

(Continued on page 1042)

Just Like Fuel for a Locomotive . . .



FOOD to the human body is like a locomotive's fuel. It furnishes the power. But there must be a smooth running, carefully tended means of extracting and using that power.

In the body this means is the gastro-intestinal tract. Working, playing, succeeding in every endeavor requires that the digestive organs function efficiently and smoothly. They must be treated well—guarded carefully. Periodically the family physician should check up on their condition.

And this check-up can be complete and definite. Whenever there is question, doubt can be removed. With x-rays a careful study of the digestive system can be made . . . and the various parts graphically shown . . . the cause of disorders disclosed.

Safeguarding Health

As a general safeguard for your health, a complete health audit should be an annual event. When questionable symptoms arise, be certain that an x-ray examination is included. X-rays disclose most diseases in their first stages when treatment is more simple and more sure of success.

HAVE AN ANNUAL HEALTH AND X-RAY EXAMINATION

• *The booklet, "X-rays and Health," explains the ways x-rays are used in maintaining health. Mail the coupon to receive a free copy.*

EASTMAN KODAK COMPANY, *Medical Division,*
363 State Street, Rochester, New York

Gentlemen: Please send me a copy of "X-rays and Health," without charge.

Name _____

No. & St. _____

City & State _____

Our Answer

To the Call for Aid In Bringing About Business Recovery

IS AN IMPROVED AND EXPANDED

SCIENTIFIC AMERICAN

DESPITE the fact that publishers' costs in every direction have already, or are scheduled soon, to go up, Scientific American has expended extra money in improving its appearance, in adding extra pages, and in giving a wider variety of scientific, industrial and engineering features in a more authoritative fashion than any other magazine of its general class in the world.

ALERT, thinking people—leaders in progressive thought, leaders in their communities, executives, manufacturers, doctors, lawyers, educators, laymen—find in Scientific American authoritative and understandable articles on the vital scientific, industrial, and engineering influences that are molding present-day civilization. For example:

IN THE NOVEMBER ISSUE

HOW MUCH POISON CAN WE EAT? is a sane discussion which steers a sensible mid-channel course between those who sell us foods containing poison in harmful amounts and the overwrought crusaders who exaggerate the importance of small amounts of certain poisons in our foods.

MORE WATER FOR THE PANAMA CANAL explains the great need of the new Madden Dam for flood control, for the generation of electricity, and as a necessary additional supply of water for the canal, and describes the engineering and construction features of the dam.

FARM PROBLEMS AND THE MACHINE sums up the difficulties faced by farmers and shows how the use of machines may take the farmer out of the red.

THERE IS NO SAND IN SANDPAPER has a dramatic background of research and development important to each of us because of the fact that sandpaper is used on practically every article met with in our daily lives. It is a dramatic story of a new electrostatic method of regimenting the grains to stand on end for greater efficiency.

These are only a few samples of several dozen articles in the same issue covering various phases of:

Pure Science — **Engineering**
Industry — **Archeology**
Aviation — **Astronomy**

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Send us One Dollar and we will send you Scientific American for four months. (Mention Hygeia.)

35c per copy **$4.00 per year**

SCIENTIFIC AMERICAN

Munn & Company, Inc., 24 West 40th Street, New York

TRAINING FOR ATHLETICS AND HEALTH

(Continued from page 1040)

the digestive system is burdened with a heavy meal. The meal prior to a game should be eaten at least three hours before the contest. The following meal is quite sufficient: a small steak or slice of roast beef; two pieces of toast with plenty of butter; a small baked potato or creamed potatoes, and a small milk pudding. You should not drink too much water on the day of a contest and surely not within three hours of the game. Water makes an athlete loggy and unable to speed up as he should.

Contrary to the prevailing opinion, football is not particularly injurious to the health. In proper training, your health will benefit. It is true that football players suffer injuries, but the injury is seldom of a lasting nature; it soon heals and is forgotten. There are games that do injury to some specific organ as, for example, the heart. Continued physical effort, without an interval of rest, does harm to the heart; but there are so many moments of rest in a football game, as, for instance, when the signals are being called, that practically no damage is done to this organ.

However, since it is true that injuries take place in football games, you should know something of how to care for them. Probably the most common injury in football is a sprained ankle. Such an injury is best cared for by soaking the ankle in hot water or by putting on hot or cold towels.

A sprain is the wrenching of a joint. The symptoms are pain, followed by swelling and discoloration of the skin. When an ankle is severely sprained, the foot should be kept elevated for a day or two; and before any attempt is made to walk on it, the weakened part should be supported with a bandage and adhesive plaster. In every severe injury of the joint x-ray examination for a possible fracture should be made.

Sometimes a football player is "knocked out" in a game. This takes place because of shock or exhaustion. The player who is in good physical condition is seldom knocked out. When that happens, the player often regains consciousness almost immediately and is quite able to go on with the game. In some cases the shock is severe; then the player ought by all means to be taken out of the game, and the services of a doctor should be secured.

Nearly as common as a sprained ankle is a bruise. A bruise is caused when a section of the body receives a hard blow, causing the

TRAINING FOR ATHLETICS AND HEALTH

blood to leave the blood vessels and resulting in immediate swelling and the common black and blue spot. In treating a bruise, try to prevent further swelling and pain. This can be done by applying an ice pack or extremely hot or cold water. A compress, soaked in a solution of magnesium sulphate (epsom salt) and placed on the bruised part, also gives relief. Raising the bruised part diminishes pain as the blood supply is lessened.

Strain is quite common among football players. This is really an overstretching of the muscle or tendons. In severe strain the small blood vessels are broken, and the blood escapes into the muscles. Pain results, followed by stiffness and lameness. Arnica and witch hazel help to deaden the pain, and gentle massage is beneficial. This may be followed by more vigorous massaging later.

In attending to a fracture, extreme care should be taken to see that the part is not moved. Moving the injured part may result in further damage, causing compound fracture, which is much more serious than simple fracture because of the danger of infection entering through the external wound. The wound in the skin should be immediately painted with iodine and covered with sterile gauze or, if that is impossible, with a clean cloth.

So try to prevent all movements of the broken bone. This will mean that you should never attempt to move a person until the bone is protected by splints. A splint can be provided by securing a piece of wood or cardboard. Always make the splint long enough to prevent movement at the joints nearest the break. It is best to pad the splints well with soft material.

For example, assume that you are putting a splint on the lower part of the leg. Use two splints extending from the heel to a point well above the knee, thus preventing movement in the knee joint. Hold the splints in place by three or four bandages. Naturally, the next thing to do is to get the injured player to a doctor as soon as possible.

In conclusion, remember that most types of injuries come to those who have not conditioned their muscles. From every angle that you view the matter, there is no escaping proper training, for it is only after you have built up your general health and given special training to your muscles that you can hope to be a successful player in any sport.

(To be continued)

A FEW WEEKS AGO...
NO SUPPER UNTIL YOU WASH YOUR HANDS —
AW, HECK — THEY ONLY GET DIRTY AGAIN
NAG, NAG, NAG — 3 TIMES A DAY TO GET JOHN TO WASH. IT'S WEARING ME OUT
WHY! HERE'S YOUR ANSWER READ THIS LIFEBUOY AD. LET'S SEND FOR THAT WASH-UP CHART
JOHNNY WILL LIKE THIS — IT'S LIKE A GAME
...AND NOW
LOOK, MA! I'VE GOT A 100% CLEAN-HANDS SCORE
Lifebuoy WASH-UP CHART

No more dirty hands

. . . this game makes children *want to wash*

ARE you wishing yourself in this mother's shoes? Her "dirty hands" trouble is no more—Johnny's *glad* to wash up now!

Just send in *your* coupon! Home will be a happier place when the Lifebuoy Wash-Up Chart relieves you of *scolding* active hands clean. A month's keen interest in this game forms lasting habits of cleanliness.

Besides, the Lifebuoy Chart illustrates how hands pick up germs from almost everything we touch—teaches that 27 germ diseases may be spread by hands (as stated by the Life Extension Institute). The Chart instructs: Wash hands often—*always before meals*—with Lifebuoy Health Soap. For Lifebuoy's rich, penetrating lather removes not only dirt but *germs* as well!

FREE: An easy way to turn dirty little hands into nice clean ones. Mail coupon below for FREE Lifebuoy Wash-Up Charts and school-size Lifebuoy Soap for each of your children.

NRA MEMBER U.S. WE DO OUR PART

LIFEBUOY

HEALTH SOAP

for face, hands, bath

free

LEVER BROTHERS CO., Dept. 1911, Cambridge, Mass.

Please send me, free, Lifebuoy school-size cakes and Wash-Up Charts for my ..... children.

Name .....

Address .....

City ..... *State* .....

A HOUSEWIFE LOOKS AT THE COMMITTEE ON FOODS

(Continued from page 993)

or misleading advertising, the Committee may render reports on products which have not been formally submitted. In this manner the public and physicians are informed of any prominent objectionable advertising for foods.

The Committee on Foods is a real champion in the cause of the homemaker. It is helping her in her important task of choosing foods for the family and in obtaining through advertising correct information on the food she buys. Tell your neighbors about this important work of the Committee on Foods of the American Medical Association, and enlist their hearty support in choosing those foods on the market which have its acceptance!

[NOTE.—In the December HYGEIA, Mrs. McCray will discuss gelatins. Lists of the accepted foods discussed each month will be sent on receipt of a stamped, self addressed envelop.]

A REFRIGERATION FALLACY

The recent propaganda that has attempted to connect the apparent increase in cancer and certain other types of ill health with the wider use of mechanical refrigeration is suspected, in an editorial of *The Journal of the American Medical Association,* of being based on commercial motives.

Since inquiries had come to *The Journal* relative to the propaganda, the need was felt to allay any unwarranted fears on the part of the public. *The Journal* explained in doing so that its interest was merely to give proper interpretation to statistics concerning public health rather than to take any part in the claims made for mechanical refrigeration as opposed to the use of ice.

Claims that mechanical refrigeration devitalizes food and renders it toxic, thereby causing a variety of ills, have no reliable or scientific source. Vague references to "outstanding authorities" on refrigeration as sources of this information are to be discredited.

"Whatever may be the motive which inspires this propaganda, it may be said definitely that there is no scientific evidence to support the claims. The circulation of such unfounded literature conjures weird phobias among its readers and is prejudicial to the public health because it diverts attention from real problems and discredits genuine health education. If there is any method by which it can be reached, it should be stopped," *The Journal* concludes.

$1.00 ... *now buys a real* TAYLOR FEVER THERMOMETER

ASK your Taylor dealer to show you the Instanta Fever Thermometer. Examine it carefully. Note how easy it is to read, with *below normal* temperatures marked by black lines on one side, and *above normal* temperatures indicated by red lines on the other side. When mercury touches both red and black lines, that's normal. Remember, the Instanta has the accuracy that is built into all Taylor products. It registers in one minute. Protected by black Bakelite case. The Taylor Instanta sells for $1.00. Look for the name Taylor.

FREE—"Childhood, Youth and Old Age," helpful booklet on family's health, sent free if you write Taylor Instrument Companies, Rochester, New York, or Toronto, Canada.

Taylor INSTRUMENTS

IN INDUSTRY, other types for indicating, recording and controlling temperature, pressure and humidity

POSTURE

(Continued from page 999)

case, the close association between footwear and posture must always be kept in mind. The Posture League has designed shoes of the straight, inflared and outflared types, providing for this natural variation in the normal foot and, at the same time, correcting or preventing a position which would tend to drop the arches and produce pain or deformity.

Another frequent postural deformity caused or aggravated by improper clothing is round or uneven shoulders. Clothing which is supported by suspenders bearing on the points of the shoulders tends to pull them downward and forward. It is a common deformity among school children and occurs in almost 20 per cent of university students uncomplicated with other postural defects. It is frequently discovered in girls about the age of puberty, when especial attention is apt to be paid to their figure and carriage. Round shoulders are not likely to be outgrown, and patients usually become permanently and structurally set in the faulty posture, with flattened chest walls and distorted figure.

The clothing should be examined, and if the garments are found to be supported from the tips of the shoulders, they should be altered to bring the pressure in toward the root of the neck instead of out on the shoulders. It has been pointed out that the cut of most ready-made clothing causes pressure on the back of the neck and tips of the shoulders, which constantly tends to produce this deformity. Clothing, such as men's and boys' suit coats and men's, women's and children's top coats, should be bought with particular care so that the shape of the shoulders and backs of these garments does not have a tendency to encourage poor posture.

The following exercises are recommended for the correction of the ordinary case of faulty posture:

Exercise 1.—With the patient standing in his habitual faulty position, place the hand about 1 inch in front of the sternum and tell him to raise the chest and shove it forward to touch the hand without swaying the body. He will at first try to draw the shoulders back, but this fault must be overcome at the beginning. The shoulder muscles must be kept relaxed. Gradually increase the distance to which he can bring the chest forward by repeating the exercise again and again until he can take

the position without difficulty and without contracting the muscles of the back. While the patient is in this position, have him breathe deeply five times and then relax. This should be done before a mirror so that he will recognize the feeling of the correct posture by associating it with the proper attitude as seen in the glass. He should then try to take it without looking at the mirror. This posture should be drilled into him until it becomes habitual and until he can maintain it without discomfort. R. J. Roberts of Boston used to tell his young men to press the back of the neck against the collar button, considering this as the keynote of the position. In whatever way it is accomplished, the object is to get the proper relation between the thorax and the pelvis. Repeat the exercise twenty times.

Exercise 2.—Arms forward raise; upward stretch; rise on tiptoes; inhale; sideward lower; slowly press the arms back and exhale. This exercise when done correctly expands the chest, thereby bringing in all the extensors of the back and levators of the shoulders.

Exercise 3.—Standing position; arms downward and backward; fingers interlocked; palms outward; extend the neck; roll the shoulders backward and forearm into supination, the palms being first in, then down and then out. Reverse to starting position and relax.

This exercise is valuable for projecting the chest forward, stretching the shortened ligaments and drawing in the abdomen. Care should be taken to have the chin pressed backward when the arms are brought downward and turned outward. In resistant cases, where this exercise cannot be done with the fingers interlocked, a handkerchief tied in a loop may be substituted and held in the fingers.

Exercise 4.—Standing position; arms at sides; arms sideward raise; upward stretch; inhale; forward bend; and rise; arms sideward lower; exhale.

In this exercise the lungs are filled when the chest is in the most favorable position for expansion. The breath is retained when the trunk is flexed, forcing the air into the cells of the lungs under pressure. The bending and rising bring into powerful action the extensors of the back and neck and the retractors of the shoulders.

Exercise 5.—Lie prone on a couch with the feet strapped, or on the floor with the feet caught on

(Continued on page 1046)

Germ-Tainted Hands

pass on your cold to the whole family!

NRA

WHY KLEENEX IS SAFE

Handkerchief magnified 64 times *Kleenex magnified 64 times*

See above why germs pass through handkerchiefs as through a sieve—why Kleenex stops them! Actual tests show handkerchiefs leave approximately 1000 times as many germs on your fingers as Kleenex does. Hands spread germs when you use a handkerchief. Kleenex is safe, protects the family from catching your cold.

Illustrations and text copr. 1933, Kleenex Co.

BECAUSE handkerchiefs are made of woven materials, they form a network of tiny openings. Through these openings, germs and mucus pass as through a sieve, contaminating your fingers. You leave a trail of infection wherever you go!

A safer way needed

Kleenex, closer in texture, highly absorbent, holds germs fast, keeps fingers dry, clean and sanitary. During colds, use hygienic, disposable Kleenex.

Downy soft and silky, always dry and clean, it is far less irritating to your raw, sore nose.

You use each tissue but once, then destroy. You are not constantly returning the same germs to your nose.

No handkerchiefs to wash!

What woman doesn't hate the job of washing dirty handkerchiefs? Kleenex ends this disagreeable job forever!

Your hand never enters the patented pull-out box to contaminate or mess up other sheets. You never take out more than you need—assurance of economy!

Try Kleenex for removing face creams, too. Authorities say Kleenex is so absorbent that it *blots* all impurities from the pores. The larger size is especially recommended.

And Kleenex is priced so low, you can use many tissues for the cost of having one handkerchief laundered. Try the heavier, smartly bordered Kerfs; also the new, handy Pocket Packet, 2 for 5c . . . At all drug, dry goods and department stores.

KLEENEX *disposable* **TISSUES**

POSTURE

(Continued from page 1045)

the edge of a bureau or other article of furniture. Clasp hands behind the head; raise the head and extend the spine, pressing the elbows backward.

This exercise is a severe one on the extensors of the back and the retractors of the shoulders and should be followed by a deep breathing exercise.

Exercise 6.—Position similar to that in exercise 5; arms at sides; raise the head, bringing the arms forward; imitate the breast stroke in swimming.

In this exercise the spine is kept in static contraction, while the retractors of the shoulders are alternately contracted and relaxed.

ORANGE IS GLORIFIED FOR VITAMINS A, B AND C

The high vitamin value of the citrus fruits, especially oranges, contrasted with their comparative low cost today, is the subject of a detailed discussion in a bulletin issued by the bureau of home economics of the U. S. Department of Agriculture.

When oranges were brought by Santa Claus as a luxury, no one imagined they would become so plentiful that families could regularly begin every day with them. Now that they have come on the market in quantities and at low prices in almost every part of the country, it is important that they are used as often as possible because of their value in furnishing vitamins A, B and C. Lemons and grapefruit are also good sources of vitamins B and C.

Some recipes using the orange are suggested by the bureau.

ORANGE AND CARROT SALAD

2 tablespoonfuls gelatin
½ cupful cold water
2 cupfuls boiling water
½ teaspoonful salt
1 tablespoonful sugar
1 tablespoonful lemon juice
2 tablespoonfuls vinegar
1 cupful orange juice and pulp
1 cupful grated raw carrot

Soak the gelatin in cold water for five minutes. Add boiling water, salt, sugar, lemon juice, vinegar, orange juice and pulp. Chill the mixture. When it is partly jellied, stir in the carrot, pour into wet molds and set in a cold place. Turn out onto lettuce leaves and serve with mayonnaise or cream salad dressing.

ORANGE SHORT CAKE

Make a soft biscuit dough, cut with a large cutter and bake in a moderately hot oven. While the biscuits are hot, split and butter them, put in the orange filling and place a slice of orange on top of each.

To prepare the filling, peel the oranges and cut them into small pieces. Thicken the juice with a little cornstarch and sugar well mixed, and cook this mixture for about three minutes, stirring constantly. Add the pieces of orange and a little salt.

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OLD MAIDS' CHILDREN

(Continued from page 1004)

"How nice," I was forced to admit, though I was a little dubious. "I will do some experimenting before I'll admit you are right," I added.

Norma laughed. "All right, let me know your results. They may be better than you expect. You remember you told me about the twins' attempt to 'clean the bathroom' the morning I came. Well, why not give them a small pan of soapy water and a box of scouring powder, and turn them loose? When they are through, put them in the tub, for they will no doubt be wet anyway, and praise them for their work. They will feel so proud that they will probably show daddy the bathroom as soon as he comes home; and they will feel that they are really helping."

"Norma, you have certainly given me a great many good ideas. I hope I can carry them all out, though I shall probably be a miserable failure. I only wish we had had this talk before; then you could have helped me work out some of the plans, and if they didn't work out, you would have been here so that I could . . ."

"Say 'I told you so,' " interrupted Norma. "Well, you can write and tell me how they work out. I shall be most interested. If you write and say 'I told you so,' I won't mind; for as I said before, 'old maids' children' are easy ones to discipline. Oh, one more thing. Those youngsters take any and all of the magazines from the tables and tear them before any one gets a chance to read them."

"And does it please their daddy? I'll say not! But what can I do about it? All the authorities say not to put things up out of children's reach, so what is there to do except punish them each time?"

"The reason you shouldn't put things up, out of reach, is because children should learn early in life that they cannot have everything which they see or with which they come in contact, any more than adults can. They must learn to respect the rights of others; and the earlier they learn it, the happier they will be through life. It is easiest to put things up, of course, but that does not help your child. Have you ever thought of keeping the older magazines and anything along that line that the twins could have in a certain place, say on the bottom of that table over there? It is easily accessible, and if the twins feel that it is their shelf and that those are their magazines, they will

take a certain pride in it and soon learn to leave the others alone.

"I never thought of that," I mused.

"Let them help you clear the shelf; then let them get the books they want to put on it and give them some old ones that you know they like. Tell them they are their own, and then show them the neat little piles on the other tables and tell them that these are mother's and daddy's. They will probably forget at first and start to take one from your stack; but watch closely, and when they do, simply say firmly and smilingly, 'Put it back, dear. That is mother's. Here are your magazines.' It will be no time at all before they will learn, and your magazines will remain untouched. This helps when you have the children with you in other homes too. They will not touch magazines there, knowing they are not theirs. By the way, this suggestion, too, is one I learned from the same Chicago friend. The plan worked like a charm with her girls, and it is amusing to see the older ones teaching it to the younger ones."

"Don will be thrilled with that suggestion. I don't know of anything that puts him on edge more than to pick up his favorite magazine and find it torn. Hello, dear, did you hear me talking about you?" I asked as my husband walked into the living room. "I have been taking a course in child training," I added.

"And from an old maid too," laughed Norma. "If my suggestions fail, blame it to my spinsterhood. I won't be here, anyway, so you can say anything you want about me, you see. I won't even know it."

But her suggestions did work. And even though it took patience to carry out many of them, the results were well worth the effort. It was no time at all before we began to see great improvement and before I began to realize not only that I had more leisure time but that I was also not under any tension. The twins, being kept busy, were happy and not at all interested in molesting the belongings of others. By meeting their various mischievous pranks with appropriate substitutions, I found that there was rarely a repetition of the same pranks. True, they were lively, active little creatures and kept me busy, but the element of incorrigibility was gone. So I am enduringly grateful to "the old maid's children" for any success which I may have with my youngsters' training.

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SEX EDUCATION

(Continued from page 1008)

high adventure; they may yawn through a recitation on safety. By this I do not mean to advocate that boys should be taught to be reckless, but neither must they be taught fear. Prudence is quite different from timidity. Boys are too often taught to stay on the curb when they should be shown how to cross the street.

Girls are being encouraged to be teachers, stenographers, concert pianists, prima donnas, lawyers, doctors and nurses. As a matter of fact, most of them, fortunately, will become housewives and mothers. Why cannot these objectives be held up as ideals? Then, when these girls have homes of their own, they will find in the monotonous routine a purpose toward their ideal. In case, however, they have been taught that they are to have some glamorous career and then find themselves washing dishes for a family, they are almost certain to despise their task. There are those who suppose that a career as a mother is a narrow experience as compared with that of typing letters for a concern that sells lumber or vacuum cleaners. Some suppose that a mother needs less education than a teacher who does nothing but teach a single subject in a high school. The mother must be a nurse, a legal adviser, a cook, a dietitian, a financial genius, a diplomat, a pedagog, an authority on child psychology, and a hundred other things; at least she should be. Why cannot this be made a career toward which girls can be pointed with pride?

Psychologists tell us that the child is half educated long before he starts to school. His mother supposedly has taught him the mother tongue, his habits, his manners, his attitude toward life, his self control, his reliability, his respect for truth and right, his religion, his patriotism. Yet the task of a mother is considered too lowly to serve as an ideal! A wife who has the responsibility of five children once lamented that she envied a woman of her age who had attained a degree of success in bacteriology. She should be reminded that the other woman grew bacteria in culture tubes, while she was growing men and women in a home. All this is important in sex education. Indeed, the girl who has been brought up to regard her womanhood as a career, and the boy who is thoroughly grounded in the principles and practice of manliness will probably not make a great mistake in sex life.

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SEX EDUCATION

The preadolescent age is a period which is immensely important in the orientation of the boy or girl. Orientation is possible at this time for the reason that the strong sex impulses have as yet not taken definite direction because of their relatively immature state of development. A little later they will be so strong that they will take the bit in the mouth and run away. Happy is the adolescent who has been set in such a direction that he can permit his sex to run away for the good reason that it is running in the direction of the greatest advantage. Those driving men and glorious women who make the world go round are the ones, in large measure, who found their correct bearings in the preadolescent period.

[NOTE.—In the December issue, Dr. Rice will discuss "The Period of Adolescence."]

HEIGHT-WEIGHT TABLES ARE NOT INDEXES OF HEALTH

"The relationship of weight at given ages and heights to nutrition, and its significance as an index of the general health of the child, have long been of interest to medical investigators. Public health workers have made extensive use of height-weight tables as a screening method to detect at least the most severe grades of undernourishment. The common use of the height-weight tables has so popularized weight that an industry of no mean proportions has developed in the weighing of human beings. It is reported that the largest return on any investment at the Century of Progress Exposition is that of the 'guess your weight' scales. The erroneous impression expressed in the current phrase 'your weight indicates your health' is evidence of the extent to which this idea has been established with the public. Actually, normal weight does not necessarily mean good health; nor do deviations from the average or mean always indicate poor health," an editorial in *The Journal of the American Medical Association* explains.

"Thus the consideration of height and weight as an index of nutritional health has progressed through a number of interesting phases. Height and weight tables still have definite uses. In the hands of the physician and associated with a competent physical examination, they are still valuable. They may no longer, however, be accepted as sole measures, or even as satisfactory gross indexes, of the state of nutrition of a given child at a given time."

THEN AND NOW: A CENTURY OF PROGRESS IN SURGERY

(Continued from page 1019)

invested in lands, buildings and endowments to be used for its advancement. Surgery requires the longest and the most exacting apprenticeship of any profession or of any calling. There are 10,500 Fellows in the American College of Surgeons. It requires a personnel of almost a million to man our hospitals. More than one million surgical operations are performed each year with but a small mortality.

One hundred years ago this was a rural country, and dangerous accidents were of comparatively rare occurrence. Today in our civilized network a greater number of deaths and accidents are caused by the machinery of civilization than occurred in the same period of time in the American army in active fighting in France. Man is at war with the machinery of civilization. One hundred years ago we were killed by our ignorance. Now we are preserved and we are killed by our intelligence, our science and our invention.

What of the next period? The nature of protoplasm will soon be expressed in mathematical equations. Cancer, which consists of protoplasm, will be understood and, it is hoped, will be prevented and cured. The stress of civilized life will be minimized by the power of exact knowledge aided by the application of the newer surgical physiology and the hormones of ductless glands. The surgeon will make greater use of the principles of evolution as applied to the entire man, and no less to the biochemical and biophysical units that comprise the energy mechanism of his protoplasm.

One hundred and thirty-two years ago a great system of surgery was published by John Bell. In his introductory "Discourse on the Education and Duties of a Surgeon," he has this to say regarding the history of surgery, words for the most part as applicable today as when they were written:

"But I am to explain to you the importance of studying the history of our science. We have lying before us, challenging us to diligence, all the successive improvements of two thousand years. The study of these calls into action every faculty of the mind, fertilizes the invention, ripens the judgment, and makes us really fit to decide upon the modes and practices which are to be preferred. By this exercise of the mind we become familiar with difficulties; for while we are studying the history of science, all the most nice and important points are presented to us again and again, and discussed by various judgments and in various forms.

"The truth is, that the practices and the prejudices of the old times mix themselves with the more orderly and perfect operations of the present day; and this is a subject of study which we must not neglect. We have now leisure to observe, how slowly diseases have been understood, or operations invented or improved; we can remark how slowly and how imperfectly anatomy has been applied even to this day; at this moment we are employed in rooting out the prejudices and barbarous practices of those Gothic times! For the practice of the older surgeons was marked with all kinds of violence; and indifference about the simple cure of diseases; and a passion for operations, as the cutting off of limbs, the searing of arteries, the sewing of bowels, the trepanning of skulls round and round, and all the excesses and horrors of surgery.

"Is it not most unaccountable to see men among us expecting to excel in a profession which they have not studied? eager to be known as improvers without having ripened their minds by studying the inventions of others? vain of their opinions, practices, and pathologies of diseases, in which they are often excelled and anticipated by authors which they have never read? Many a busy creature do we see proclaiming as fine inventions of his own (!) instruments or operations which have been described, drawn, commented upon, condemned, neglected, and revived again, centuries before this new inventor of old things, was himself born. While he troubles the world with his novelties, he has every fault but that of designing ill, or committing any wilful plagiarism; he is innocent of the knowledge of all old inventions. Whoever has thus neglected to study the history of our profession has a narrow mind, and prefers the little opinions of his particular master, to the accumulated wisdom of ages; he dwells with enthusiasm upon those theories which have taken first possession of his mind, and never is he able to emerge from the atmosphere of the particular school in which he was bred."

Thus John Bell wrote one hundred and thirty-two years ago.

Looking back over the century of surgery, one is struck by the

(Continued on page 1050)

Will WINTER WEATHER Add New Lines to Your FACE?

Remember last winter—and the winter before? Why take chances of having blotchy, chapped skin; red, rough skin; dry, itchy skin?

You can keep the skin of your face, hands, neck and body smooth and soft through any weather changes—by faithful use of rich Nivea Creme or the new liquid Nivea Skin Oil. Each of these contains the remarkable element, Eucerite, which is responsible for the unusual ability of Nivea to keep skin soft and young.

Doctors and nurses recommend Nivea Creme or Nivea Skin Oil for protecting the tender skin of babies and children. Why not try it and prove to yourself the economy and satisfaction of relying upon Nivea.

Send the coupon for your Free tube of Nivea Creme—or for trial bottle of Nivea Skin Oil.

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and weight are found among those children who are protected from simple goiter!

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IODINE, by protecting children from simple goiter, exerts a remarkably beneficial effect on growth.

This was demonstrated by Dr. Percy Stocks, of a famous university, who compared the heights and weights of a large number of 12-year-old youngsters who had been taking iodine regularly with those of an equal number of 12-year-olds who had not.

He found that those who had been receiving iodine averaged almost 2 inches taller and about 8 pounds heavier than those who had received no iodine. Thus proving the wisdom of protecting children from the growth-hampering effects of simple goiter!

If you want *your* children to escape being handicapped by this disorder, begin to use Morton's Iodized Salt *at once!* It is neither a drug nor medicine, but just a pure white table salt to which has been added sufficient iodine to prevent simple goiter.

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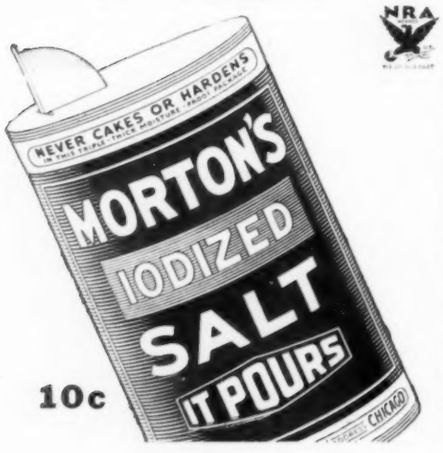
WHEN IT RAINS IT POURS



10c

THEN AND NOW: A CENTURY OF PROGRESS IN SURGERY

(Continued from page 1049)

steadily increasing speed of development, reaching a crescendo in the last quarter of the century. In this century more progress has been made than in all the past history of the human race. Looking forward into the next century, we can glimpse a century of fewer operations, for biochemistry and biophysics will tend to supplant the scalpel. Present-day theories will give way to mathematical equations involving the constants of physics, and the maxim of Lord Kelvin that "until we measure, we do not know" will be realized.

USE LEAD GASOLINE ONLY FOR THE TANK OF YOUR CAR

"Shortly after lead tetraethyl was first used as an anti-knock agent in gasoline, a thorough investigation was undertaken to determine whether the use of gasoline containing this lead compound presented a public health hazard. The conclusions of investigations in this and other countries were that the use of gasoline containing this lead compound for motor fuel presents no apparent health hazard to the public providing certain common sense precautions are observed," according to a report from the Connecticut state department of health.

Much of the gasoline sold at present contains lead tetraethyl but the advertisements do not carry that information. There are many advantages ascribed to the use of lead tetraethyl in gasoline for motor fuels; but the difficulties of the situation are that the contents of the gasoline tank of automobiles are frequently used as a source of family supply, and some of its contents are used about the house or small garage for dry cleaning, cooking, or cleaning small parts.

If dry cleaning must be done at home, there are substances for this purpose which are better than motor gasoline and which do not present such a fire hazard. There is also a grave danger of poisoning when tetraethyl is used for cooking purposes.

Some states require a dye to be used with lead gasoline so that when it is withdrawn from the tank of the car, the color of the dye is evident and will cause stain, thereby deterring individuals from using it for cleaning purposes.

Do not use lead gasoline for any other purpose than for gas in the tank of your car.

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SCIENCE DISPELS FOOD PHOBIAS OF FOOTBALL PLAYERS

To supply the need for scientific information on the diet of the athlete, *Scholastic Coach* publishes an article, "Diet for a Football Player," by Dr. William I. Fishbein and Dr. Morris Fishbein, Editor of HYGEIA.

It is unfortunate that many young athletes must depend on a wide variety of ideas as expressed in hearsay and advertisements for their training table diet. According to Dr. D. C. Parmenter, whose opinion is cited, the best diet for the man in training is that which most closely resembles good, wholesome, home food.

The book, "Training, Conditioning and Care of Injuries," by Rockne and Meanwell is lauded for its ridicule of certain food phobias, but it is also discredited for other food advice given.

Introducing a concise, simple discussion of proteins, carbohydrates and other foods in relation to their caloric value, the article says, "There is just one reason why the diet of the football player, during the training season, should differ a great deal from what he ordinarily eats if the diet he has been using is a well balanced one. That one reason is the expenditure of more physical energy and the wearing out of tissues as a result of the increased physical exertion."

While protein is needed to repair worn-out muscle tissues, it is wasteful for the athlete as well as for any one else to eat too much protein food. The amount needed depends on the weight of the individual and how strenuously he participates in the game.

Regarding pies and pastries, cake and ice cream, which cause the young athlete so much concern, the authors advise limiting them only because they cloy the appetite and make the proper consumption of other required foods difficult. Pastries are not so difficult to digest that they must be avoided entirely.

Calories in the football player's diet should vary from 3,000 to 4,500, the amount again depending on the weight. The relative proportions of the various foods should be distributed as follows: from 15 to 20 per cent in protein; from 30 to 35 per cent in fats, and 50 per cent in carbohydrates.

The object of a training table diet during the football season is to keep the body weight constant. Too much food increases weight and develops fat, and too little results in excessive loss of weight.

"He sleeps well who knows not that he sleeps ill."—*Maxim.*

THE FOOD VALUE OF CRANBERRIES

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Their attractiveness and palatability

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A good source of Vitamin C, with small amounts of Vitamin A.

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The presence of iodine in cranberries

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

Analytical Researches on these important points concerning cranberries have been made by C. R. Fellers, Ph. D. of Massachusetts State College, Amherst. A copy of the report will be mailed on request.

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HIS BEST FRIEND MUST HAVE TOLD HIM!

Or perhaps he himself suspected, as many people actually do, that he had an unpleasant breath. So he proceeded to follow the advice he found in various advertisements to use So-and-So's antiseptic. Poor fellow! He may reduce the obnoxious odor for the time being, or substitute for it a "drug store breath." But how much better it would be if he would get at the cause and remove it!

"A laden breath is a symptom of illness just as surely as is fever or headache," writes Dr. Julian W. Brandeis in next month's HYGEIA. And he lists numerous causes of bad breath, some of which could never be stopped with barrels of mouth washes. But he does tell what can be done in many cases to rid one of this social and physical handicap. So widespread is the interest in this subject, due to modern advertising, that HYGEIA readers will welcome this authentic article on "Unpleasant Breath: A Symptom of Disease," in the December issue.

This article may be the very thing you need to make life happier for you—and those around you. Every issue of HYGEIA has something that will appeal to you, and you may feel that some have been written especially for you! Are you reading HYGEIA every month? If not, use the coupon below and make sure of getting the next six issues at a special introductory price.

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Good Things in Store for Readers of the December HYGEIA:

If you don't lose any weight no matter how little you eat or if Junior remains thin in spite of your coaxing him to drink a quart of milk a day, you may discover the reason by reading Elizabeth M. Koch's article entitled *"Waist-Lines and Life-Lines."* There are diets—and diets!

★ ★ ★

Sleds, skates and skis too often mean tragedy as well as exhilarating fun. *"Let's Make Winter Sports Safer"* is George Randall McCormack's timely appeal to HYGEIA readers.

★ ★ ★

In the average home the Christmas celebrations are *"Holiday Follies,"* according to Margaret McEachern. Her sensible article will help numerous families to make this Christmas a time of happiness instead of havoc.

★ ★ ★

Another timely article for the homemaker is one in which Susan Beach gives helpful suggestions for *"Holiday Roasting and Broiling."* The illustrations alone will make your mouth water!

★ ★ ★

Too many parents take it for granted that a cross-eyed child "will outgrow it." But no boy or girl need grow up under such a handicap if parents follow Dr. Robert J. Burke's advice on *"What to Do for the Cross-Eyed Child."*

★ ★ ★

You don't want your baby to be like Topsy who "just growed up." But it takes knowledge on your part to help your baby to learn the many things he needs to know even before he passes his second birthday. If you are a young mother, you will be particularly interested in Katherine Bronell Oettinger's next article in her series, *"Before Baby Is Two."*

★ ★ ★

How most parents dread *"The Period of Adolescence"* for their children! But they will find much helpful advice in Dr. Thurman B. Rice's series on *"Sex Education"* next month when he discusses that difficult age. If you have a boy or girl approaching the teens, don't fail to read this! . . . . And these are only a few of the worthwhile articles in store for HYGEIA readers next month. . . . There are others just as interesting and entertaining. . . . Don't miss them!

5 Star Features in these new VANTA Garments

New Ideas—
New Garments—
New Results

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★ **1** Lastex inserts at sides keep seat snug to body. (Pat. app. for.)
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★ **5** "Self-Help" VANTA construction. Only one button.

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Mothers! At two years your Baby should begin to wear VANTA Self-Help Garments, designed to make dressing easy for Baby. Fastenings are few and made for tiny fingers. The Red Heart label guides the way.

A WONDERFUL BOOK FREE

The Toddler is a beautiful 34 page booklet, covering the "neglected age" of from two to six years. It tells how to train your child to be resourceful rather than dependent on others. You can get this booklet free at the Infants' Department of your favorite store.

Earnshaw Knitting Co.
Newton, Mass, Dept. H-11

Please send me without charge of any kind free copy of "The Toddler" which covers "the neglected age" from two to six years. Tells how to train your child to be resourceful rather than dependent on others.

Name .....
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PERSEVERANCE NEEDED TO CONTROL SPREAD OF "ATHLETE'S FOOT"

That 50 per cent of the adult population of the United States is infected with ringworm of the feet, commercially known as "athlete's foot," is the estimate of the United States Public Health Service. The increasing importance of the disease as a public health problem has led the Connecticut state department of health to publish a bulletin on the causes, characteristics and treatment of the disease.

Because it is communicable, it may be spread by direct contact or indirectly by contact with a contaminated floor or other object. The fungus-bearing material is most frequently found in locker-rooms or shower-rooms where it forms a ready source of infection. Certain colleges report as high as 90 per cent infection, and in gymnasiums where there are no control measures there is practically 100 per cent infection.

Such substances as leather, hair, wool, silk, horn and feathers are thriving places for the fungi, as is also the bacteria-rich dirt that collects in cracks and corners of floors of shower-rooms and around swimming pools.

Although clinically there are several types of the disease, they are all similar in the cracking of the skin with fissure formation. The infected nails often become thickened, brittle and disfigured, and the disease may become severe enough to incapacitate the victim.

A number of chemical agents have been found to be efficient fungicides as preventive measures, and almost all school health services are now instituting some form of antiparasitic foot bath. Cleanliness and the use of disinfectants in gymnasiums and for athletic equipment is important.

Treatment of ringworm is a medical problem and should be referred to a physician. Although there is no single specific, most cases respond favorably to several methods of treatment under proper hygiene. Shoes and socks should be changed frequently and the feet must be kept thoroughly dry. Since the disease is frequently latent, its cure is difficult to determine. Reinfection may occur at any time.

Experience and perseverance are required to control this communicable disease; medical treatment for the individual case is imperative.

It's bad enough for a banana peel to throw a pedestrian but inexcusable for a pedestrian to throw a banana peel.

HERE MOM,

.. thought maybe you an' pop 'd be glad to have a different hot cereal for a change"

And Pettijohn's IS *different. It's flaky, flavory. Fun to eat. Real, genuine rolled whole wheat. Cooks in 3 to 5 minutes!*

FOR years Algernon had *trusted* his parents. Believed them when they said there *were* no different hot cereals. Then...one day...a friend told him the truth. Told him about Pettijohn's....!

Pettijohn's is such fun to eat. No mushiness here. Instead, a crisp, *meaty* whole grain texture...a luscious, tangy, whole wheat flavor. Why? Because Pettijohn's isn't "ground." It's *flaked* thin. That's why it tastes so deliciously different. That's why it cooks *done* in 3 to 5 minutes. That's why it acts as a dependable regulator.

If you believe in the pep and vigor and optimism that right-eating brings ... if you believe in variety in hot cereals, try Pettijohn's tomorrow morning.

NRA

Pettijohn's is accepted by the Committee on Foods of the American Medical Association. This seal is your guarantee of the quality of any product.

Pettijohn's

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Product of The Quaker Oats Company

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Make This a *Real* Christmas!

If you are available for part time or full time work, this offer is for **you.** HYGEIA can use the services of energetic, wide-awake men and women. The work is not merely soliciting magazine subscriptions, but presenting two remarkably attractive propositions on a liberal cash commission. A representative in a Chicago suburb worked only a couple of hours a day for one month and earned over $30.00. Does that appeal to you?

Two Unusually Appealing Propositions

ONE PROPOSITION is directed to parents and should interest every father and mother, whether their children are six years old or twenty-six. THE OTHER PROPOSITION is one that every woman can quickly appreciate, whether she is a new homemaker or an experienced one. It will help her to solve one of her biggest and most persistent problems. Both propositions have a human interest appeal that makes them easy to present. They will be attractive to your own circle of friends, to your neighbors, fellow club members, business associates, and others with whom you come in contact.

Why not get full details at once? Now is the time to get busy if you want to earn money to make this Christmas the festive time it should be in your home. The coupon below will bring you complete information. Mail it *today!*

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FOR GRIDIRON SAFETY

At least one collegiate administrative leader has shown that he sensed the situation of tragic gridiron fatalities; and his plea that every effort should be made by officials to avoid the appearance of being forced by public opinion to make changes in the rules is encouraging, according to *The Journal of the American Medical Association,* which has frequently protested against the seeming indifference shown by promoters of the sport.

Although changes were made in the rules in 1932, they did not eliminate the hazards in the degree desired, for the secretary of the football rules committee reported at the next convention of the National Collegiate Athletic Association that the number of fatal injuries reported by the press was still disconcerting. It has been estimated that approximately three quarters of a million young Americans play football each year, with a mortality rate of less than 0.003 per cent, which to some devotees of the sport will not warrant the arraignment of football. Since this is the case, it will probably take a few more spectacular deaths of "fighting youth" to raise a national protest against the apparent laxity or indifference of those in command, says *The Journal.*

CARE OF MILK IN HOME

1. Have a special place for the milk to be left, preferably in a box where it is protected from cats, dogs, flies and the sun.
2. Take in the milk as soon as possible after it is delivered and place it on ice at once.
3. Do not remove the bottle from the refrigerator or the milk from the bottle until it is needed.
4. With a clean cloth wipe the mouth of the bottle or wash it before pouring the milk.
5. Be sure all receptacles for milk are clean.
6. Pour from the bottle only such milk as is needed for immediate use and return what is left to the ice at once.
7. Keep the bottles covered in the refrigerator and do not put them near fish, onions or other things with an odor. Milk readily absorbs flavors, and the taste is spoiled.
8. Under no conditions give to children milk that is old or slightly turned. Sour milk can be used easily in cooking.
9. Wash the bottles thoroughly after they are used. Return them promptly to the milkman.

—Bureau of Health Bulletin of Allentown, Pa.

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DEFINITE AIDS IN CARING FOR TEETH ARE ENUMERATED

One of the most common requests for information on the teeth, according to Dr. J. M. Wisan, chairman, council on mouth hygiene, New Jersey State Dental Society, is for a set of rules giving in tabloid form the essential practices which aid in forming healthy teeth. Such a set of rules is the following:

1. Remember that the teeth are living tissues, affected by systemic health and in turn affecting body conditions.

2. Provide proper foods, paying particular attention to milk, fruits and vegetables. This advice applies especially to expectant mothers and to children, but should be followed by every one desiring a healthy mouth.

3. Practice health-giving habits. Consult a physician for frequent check-up on physical condition.

4. Take children to dentist at early age. The most effective method of decreasing dental diseases is to give the children the benefit of early and regular dental treatment.

5. When teeth are crooked, have them straightened. Much decay in later life, dental diseases such as pyorrhea, and many disfigurements of the face can be prevented by following this rule.

6. Keep mouth clean. Learn to brush the teeth carefully and thoughtfully before retiring and after every meal if possible. See to it that all sides of all teeth are properly cleaned.

7. Do not depend on mouth washes and tooth pastes to prevent mouth disease. Research workers have proved that their value lies only in keeping the mouth clean.

8. Attend to dental defects during the incipient stages. If this advice is followed, many teeth will be saved that would otherwise be lost. This is best accomplished by making the visit to the dental office a regular habit. The more susceptible your teeth are to decay, the more frequently you should obtain dental treatment.

9. If teeth are lost, be sure to replace them. If this is not done, the other teeth move and cause irregularities in their arrangement; spaces will form between the teeth, and in some cases the teeth will actually become loosened.

10. Have x-ray examination of the teeth every year. This will help the dentist to discover defects before they assume serious proportions. The x-rays will likewise enable him to find any infected teeth before they cause some systemic disorder.

■ An uninterrupted feeding schedule is all-important to baby's health, doctors agree. Delays due to bottle breakage are dangerous.

That is why so many doctors suggest Pyrex Nursing Bottles for babies under their care. For these bottles are practically immune to breakage from heat and cold!

Boil them in the hottest water for sterilization—set them in the refrigerator—and they're safe!

Six-sided on the outside . . . rounded on the inside . . . with flat, level base. Pyrex Nursing Bottles come in two sizes . . . 8-oz., narrow neck or wide mouth, 25¢; 4-oz., narrow neck, 15¢.

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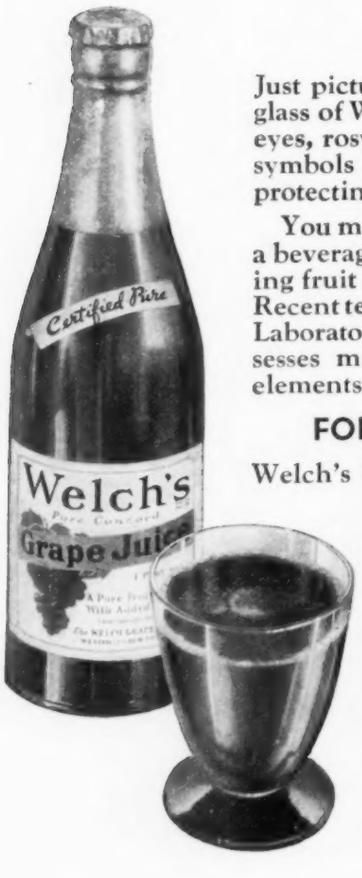

Just picture your child back of this glass of Welch's Grape Juice. Bright eyes, rosy cheeks, radiant smile . . . symbols of health . . . the result of protecting care.

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AND NOT CHEAPER JUICES?

It is the Welch process that retains in the bottled juice the valuable nutritional properties of ripe Concord grapes so essential to the system. Welch's is the Certified Pure, Pasteurized Grape Juice. It's aged three months to permit the natural but crude tartaric acid crystals to settle out of the juice. It contains no adulterants, no synthetic flavors, no artificial coloring, no preservatives, no added water. And it's inexpensive . . . the cheapest in 35 years. Welch's is undiluted grape juice, so many prefer to add one-third water to the pint. Mixed this way, Welch's costs less than 3½c a glass.

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